MONTHLY

JOURNAL OF AGRICULTURE.

NO. 6. DECEMBER, 1845. VOL. I.

THE HOUSEWIFE'S DEPARTMENT....POULTRY.

"Take weapon away, of what force is a man?
Take huswife from husband, and what is he than?

As lovers desireth together to dwell,
So husbandry loveth good huswifery well.

Though husbandry seemeth, to bring in the gains,
Yet huswifery labours, seem equal in pains.

Some respite to husbands the weather may send,
But huswives' affairs have never an end.

As true as thy faith,
Thus huswifery saith.

I serve for a day, for a week, for a year,
For life-time, for ever, while man dwelleth here.
For richer, for poorer, from north to the south,
For honest, for hardhead, for dainty of mouth.
For wed and unwedded, in sickness and health,
For all that well liveth, in good commonwealth.
For city, for country, for court, and for cart,
To quiet the head, and to comfort the heart."

To all good Housewives, greeting—*from the Editor of the Farmers' Library:*

In the sixteenth century reigned in England that sanguinary villain, Henry VIII. who cared not so much about *chopping off a wife's head* as you would for the cutting off that of a favorite turkey. History says "he made himself so much feared that no English king had fewer checks to his power; and liberty and constitutional equipoise were out of the question during the whole of his reign—or, what is worse, *the forms of them were rendered purely subservient to his passions.*" If he ordered a law to be passed, it was done; and no sooner was it passed than by his will he could have it expunged. Well, it was in the latter part of the same century that gave birth to this licentious despot, that lived one "Thomas Tusser, Gentleman," author of a poetical work on "Five Hundred Points of Good Husbandry, together with A Book of Huswifery,"—to which last the above lines make the preface—and we beg you will let them do the same for what follows.

How vain would be all advice to the husbandman, and all his own care and industry—according to our observation, which has been "pretty considerable,"—if he be not seconded and encouraged by smiles and good management on the part of the housewife within her department.

"When husband is absent, let huswife be chief,
And look to their labour, that eateth her beef.
The huswife, so named (of keeping the house)
Must tend on her profit, as cat on a mouse."

Hence it is that we propose, but mind we do n't yet absolutely promise, to open, and to fill as well as we can, a Housewife's Department, in at least every quarterly or third number of the Farmers' Library; for why, seeing that

"What husband provideth with money his drudge,
The huswife must look to, which way it doth trudge."

as Father Tusser says—why, say we, should she, too, not receive all the aid and enlightenment that can be given in her peculiar sphere of action? It was, therefore, good ladies, in the hope, rather than in the confidence of ability to

be useful, that in the last number we engaged to devote a few pages in this one to the consideration of some of the manifold cares and labors that belong to the domestic and social position of the housewife.

Everybody knows that all writers and men of good sense are agreed that, in all countries, nothing is a surer index of the state of civilization and social refinement than the more or less respect which is paid to females generally, and the estimate in which the public holds the part which is assigned to woman in the round of social life and duties. As information is diffused—as the arts flourish, and civilization advances—we see women everywhere withdrawn from field labor: their burdens are lightened; they cease to be hewers of wood and drawers of water; and respect, tenderness and kind treatment succeed to the hardships and contumely which are characteristic of savage life. This melioration of woman's lot is, in fact, the fairest fruit of glorious knowledge—the very consummation of humanity! For ourselves, we confess to an instinctive respect for a petticoat, even when hanging out to dry! but Heaven preserve us, at the same time, from carrying this march of refinement, in Republican America, to that degree of aristocratic Utopian sentimentality, under which domestic happiness and the honor and prosperity of the husband shall be unconnected with and independent of the cares and attention of the *wife and the mother!* No! no! Let it never come to pass that it shall cease in our land to be, as a general thing, one of the conditions of domestic felicity and success, that, according to our venerable and considerate author aforesaid—

"As huswives keep home, and be stirrers about,
So speedeth their winnings the whole year about."

How, in fact, in any natural and honorable state of things, should it be that the faithful discharge of her duties in either of these characters can be dispensed with! What, but for the mother, would be the lot of helpless infancy? At the very moment that experience begins to clear up the confusion of impressions derived through organs not yet perfectly developed, and the errors of one sense are rectified by the observations of another, education may be said to have already commenced, and, simultaneously, the sacred duties of the watchful mother!

"Children, like tender osiers, take the bow,
And, as they *first* are fashioned, so they grow.

With her very milk the child may be said to imbibe his sentiments and the elements of his character; hence the temper and principles even of the nurse are more important than is usually imagined. "In fact," says Plutarch, "if the Spartan does not cry even at the breast—if he be insensible to fear, and already patient under sufferings—he owes it to his nurse. On this homely point, let us recur again to our old counsellor, "THOMAS TUSSER, GENTLEMAN," of the age of black letter:

"Good huswives take pain, and do count it good luck,
To make their own breast their own child to give suck.
Though wrauling and rocking, be noisome so near,
Yet lost by ill nursing, is worser to hear.
But one thing I warn thee, let huswife be nurse,
Lest husband do find thee, too frank with his purse.
Teach child to ask blessing, serve God, and to church,
Then bless as a mother, else bless him with birch.
Thou huswife thus doing, what further shall need?
But all men to call thee good mother indeed."

But it was not within the scope of our promise or design to descant here on the higher and holier offices of the housewife in her capacity as a mother, in shaping and tempering the character of her offspring; else might we be at no loss for exemplifications, as well from ancient as from modern times, to prove how deeply the maternal influence has stamped itself on the lives of the most illustrious characters. We might speak of Penelope and Telemachus, among the Greeks—of Cornelia, the Roman Mother of the Gracchi; and, in more modern times, we might refer to Washington and Napoleon, among warriors and statesmen—to Henry IV.—to Francis I. of France—to Alfred the Great—to Pope, Gray, Cowper, Sir William Jones, Mr. Madison, and Henry Clay. But our purpose, at present, is rather to dwell on the more homely duties of the housewife, as conducive to domestic comfort, and indispensable to *successful husbandry.*

To treat of it in either one of its several branches, good books have been written, and yet better books might be, as for example, we have had books without number on Cookery, on Poultry, on Gardening; and lately, Mr. Loudon's book on Farming for Ladies. And why not? How often does it happen in our country, that wives are left in possession of large landed estates, with a house full of helpless children; and too often the estate encumbered with heavy debts, from which nothing but energy and good management can extricate it. What an awful responsibility for a feeble, uneducated woman, born to fortune, and reared in the lap of indulgence—educated to believe it unbecoming to learn anything but the arts and mysteries of the toilet! The common fate of women so reared and educated, is but too plain. In a few years nothing is left to them but abject ruin, or the dread of it prevails with her to throw herself under the conjugal wing of some loafer, of whom there are too many, watching for such prey, and by whom the wife is too often neglected, and children oppressed and defrauded. Then it is that knowledge, and the resolution and character which knowledge only can give, enables her to show the glorious attributes that belong to a cultivated woman, roused by neces-

sity to show *what a woman can do!* For such women we should go to the rice and cotton fields, if not to the agricultural annals of South Carolina, where many who might be named, have been known, with a fortitude and sagacity almost beyond their sex, to retrieve their dilapidated estates, and do infinite honor to themselves. We could name some in Virginia and Maryland; and if God spares our lives to follow out the design of this work in the spirit it was undertaken, the portrait and memoir of some such shall sooner or later, if to be had, adorn its pages.

But again, in a feeling of enthusiasm in all that concerns the sex in their highest aims, and claims upon our admiration and respect, we are wandering from the more homely but essential branches of domestic economy, on which it will be our pleasure to discourse with them from time to time; as for instance—on *rearing poultry*; on *preserving fruits*; on the *management of the kitchen, the dairy, the garden, the grapery; the flower bed*; on *knitting, needle-work*, &c. &c.

For the present our remarks and extracts must have reference to the *Plate of Poultry* which ornaments this number.

The Bolton Greys.—Of this breed Mr. Mowbray, from whose work our plate is taken, says,—"This variety, apparently the crack breed of their vicinity, but entirely unknown in the metropolis, is thus described by Rev. Mr. Ashworth:—'small size, short in the leg and plump in the make. The color of the genuine kind, invariably pure white in the whole lappet of the neck; the body white, thickly spotted with bright black bars at the extremity of the tail; they are chiefly esteemed as very constant layers, though their color would mark them for good table fowl.'" From this description it would seem that this breed might be worth importation; but after all, Mowbray's description of poultry-house-feeding, &c. are too aristocratic, refined, costly and impracticable for common use in this country. Such books are too often written by cockney book-makers, some of whom would hardly know a duck from a goose. Mr. Bement's book on Poultry is a valuable work, but being copy righted, we do not take the liberty of extracting freely from it, but shall have recourse to Chambers' noble work, in which there is so little that is not worthy of a place, as entertaining matters of natural history, or of practical value, that we give very much at length what is there said, with notes, as they may be deemed to be appropriate and called for.

But the truth is, that these fancy breeds of pigeons and of poultry, as well as of domestic animals, do very well to please the eye, and to employ the speculations of the naturalist and bird fancier, but, for the most part, it is sufficient, if not better, to confine our attention to a *few sorts*, such as have been tried and proved, but if we have leisure and means, it were but a natural and innocent diversion to amuse ourselves with the several varieties in shape and color; and for ourselves, we would not be long on a farm, before we should become *personally* acquainted and familiar even to a feather, with each individual duck and goose and fowl and pigeon on the place—and that would be the only objection to the Guinea fowl—their undistinguishable sameness of shape, color, gait, walk, voice, temper, all as neat and uniform as West-Point graduates. By-the-bye, the most remarkable things exhibited at the late Agricultural Fair of the American Institute, were a pair of milk-white Guinea fowls, and a pair of milk-white mules. On inquiry, we had been anticipated in our wish to purchase the former, to send them to a friend in Carolina.

For American housewives there is more useful information in the article we shall take from the American Agriculturist, in this or the next number, by Mr. L. F. Allen, than in all Mowbray's book.

Speaking of varieties, there is a very large bodied, square-built breed to be found of late years only as far as we know in the neighborhood of Philadelphia, which we are under the impression is a different breed from the Bucks County: more compact and better clothed, and which we have heard called and purchased, under the name of the "*Ostrich* breed." The hens weigh five pounds from the roost when in good order, and the capon is said to weigh ten pounds. We think we have known one that weighed that much, to be sent to our old friend S. E. of Baltimore, who in matters of the table, knows a hawk from a handsaw, and never enjoys the best dish with so good a relish as when a friend partakes it with him. We purchased a few weeks since a pair of these to go to Carolina, the sire of which was said to have weighed 13 lbs.; and with them we sent, in the brig George, a pair of Malays of a rich changeable blue-black color, that promised to be of magnificent size and most splendid plumage. The egg of the Ostrich breed, as we once tested by the scales of the Chesapeake Bank, is exactly double that of an ordinary egg. The young chicken of the Bucks County breed, that we remember when a small chap, was longer on the leg and half naked.

POULTRY.

Poultry (from *poule*, French for hen) is a term applied to different kinds of large birds in a state of domestication, as the chicken or barn-door fowl, turkey, goose, pea-fowl, and guinea-fowl. The most numerous and important in every respect are those first mentioned.

Chickens.—The chicken is classed by the naturalists in the tribe of the *Gallinaceæ*, forming

part of the order *Rasores*, or Scraping-Birds. It is needless to describe minutely the appearance of the barn-door fowl. The most prominent characteristics of the cock, or male bird, are a thin indented comb, with wattles on each side under the beak; a tail rising in an arch, and a great variegation of colors. The female, or hen, is smaller as regards body, comb and wattles, and her tints are less vivid. The domestication of this bird seems to have taken place in the earliest times, and Persia is usually supposed to have been the place of its origin. Many varieties of it have been enumerated as existing in Britain; but the differences betwixt these, in the majority of cases, seem to lie as much in color as in any more important features. The best marked kinds are the following: The Dung-hill Fowl, Game Fowl, Dorking Fowl, Poland Fowl, Spanish Fowl, and Bantam.

The first of these varieties is a mongrel one, arising from crosses with all the other breeds; but it is the common and most useful variety. The best fowls of this sort are of middle-size and dark color, and have white, clean legs; the pure white dung-hill fowls are held to be the weakest in constitution, and to lay fewest eggs. It has been usually agreed to call the game fowl the proper English fowl. The body is erect and slender, and the colors showy, particularly those of the cock. In comparison with other breeds, the game bird is like the race horse beside that which draws the cart and plow. The flesh, moreover, is peculiarly white and delicate in flavor, while, though small, the eggs are also of a very superior quality. There is a peculiarity of disposition, however, in this variety of the domestic fowl, which, while for ages the source of a cruel species of sport, has always impaired the real utility of the creature to a very great degree. We allude to the pugnacious spirit which has gained for the fowl its peculiar name, So strongly marked is this propensity, that broods scarcely feathered are found occasionally to have reduced themselves to utter blindness by reciprocal battling. Even when the breed is crossed and re-crossed, a tincture of the love of fighting still remains, rendering such admixtures of species the source of risk and trouble, though in other respects very advantageous. Hence game-cocks are bred on a large scale almost solely for the battles of the cock-pit. Where persons prefer to have a game-cock in their poultry-yard, their choice, according to the best authorities, should be directed to birds of some one or other of the following colors: dark-red, dark black-breasted red, dark-grey, mealy-grey, and red dun. The Dorking fowl is named from a town in Surrey, where it has long been bred in great numbers. It is a large bird, well-shaped, with a long capacious body, short legs, and five claws upon each foot instead of four. These distinctive marks seem to be of old standing in peculiar breeds, as both Aristotle and Pliny mention five-toed fowls. Though, from repeated crossings, the Dorking fowls are now found of all colors, white or yellowish-white is supposed to have been the primitive and genuine tint. They lay large eggs, and in great plenty. The Poland (Polish or Paduan) fowl is much valued by breeders, but is seldom found perfectly pure in Britain. The species was imported principally from Holland, and when unmixed, was uniformly of a black color, with a white crest or tuft on the heads of both cock and hen. Their form is plump and deep, and the legs of the best sorts not too long. They are called *everlasting* layers, from the number of eggs produced by them, and from their disinclination to sit and hatch, which office is usually done for their eggs by other hens. The Spanish fowl is of large size, and lays large eggs. It is of the Polish family, and is almost uniformly marked by a black body, black legs, and large red combs. In London and its vicinity, the breed is now extremely common, being valued for the size of the eggs; but it is supposed to be inferior in some respects to other breeds, though yielding good food. The Bantam fowl is well known for its small size, and its feathered grotesque-looking limbs. It was originally a native of India and the nankeen-colored and black birds are the most esteemed. The bantam should have a rose-comb, a full tail, and a lively carriage, and should not weigh above one pound. It has been recently discovered that the characteristic of feathered legs is not an improvement, the birds with clean bright limbs being the best. The flesh of this breed of fowls is peculiarly delicate.

Besides these well-marked varieties of the common domestic fowl, there are a number of others, brought from foreign countries, which have produced mixtures pretty familiar to breeders. The Turkish, Malay, Rumkin, Russian, and Barbary species, may be mentioned as the principal of these. It need only be observed here, that all the crested mixtures or varieties of fowls are much esteemed, as possessing the best qualities of the race. All or any of these breeds of domestic fowls are valuable to the cottager, even one good laying hen being a treasure to a humble family.

Hen House.—Another simple poultry-house of small size may be formed by building a shed against the gable of the house, opposite to the part warmed by the kitchen fire, and placing cross-bars in it for roosting, with boxes for laying in, or quantities of fresh straw. There should always be an opening, to allow of the cleaning out, once a week at least, of the poultry-house—a process too often neglected, but very essential to the health of the Poultry. They never will thrive long amid uncleanness; and even with the utmost care, a place where Poultry have been long kept becomes what the housewives call tainted, and there they will thrive no longer. The surface of the ground becomes saturated with their exuviæ, and is therefore no longer healthy. To avoid this effect, some poulterers in the country frequently change the sites of their poultry-houses, to obtain fresh ground; and to guard against the same misfortune, farmers, who cannot change their hen-houses and yards, purify the houses by fumigations of blazing pitch, by washing with hot lime water, and by strewing large quantities of pure sand both within and without the poultry-houses. Washing the floor of the house every week is necessary; for which purpose it is of advantage that it be paved either with stones, bricks, or tiles. But as these three modes are expensive, a good flooring, which is cheaper, may be formed by using a composition composed of lime and smithy ashes, together with the riddlings of common kitchen ashes; these having been all finely broken, must be mixed together with water, and put on the floor with a mason's trowel, and nicely smoothed on the surface. If this is put on a floor which is in a tolerably dry situation, and allowed to harden before being used, it will become nearly as solid and compact as stone, and is almost as durable. The inside of the laying boxes requires frequent

washing with hot lime-water, to free them from vermin, which greatly torment the sitting hens. For the same purpose, Poultry should always have a heap of dry sand or fine ashes laid under some covered place, or thick tree, near their yard, for them to dust themselves in; this being their resource for getting rid of the vermin with which they are annoyed.

The office of keeping and managing domestic fowls should be performed by some individual whom the hens know, as the voice and presence of a stranger scare the fowls and disturb the operations of the hen-house. To distribute food and drink at regular hours, to visit the nests, to remove eggs as soon as laid, and carry them to a cool place, to examine by candle-light what eggs are fecundated, and to place these under the hen, and mark the time, are among the daily duties performed by the keeper. When the hens lay in a secret place, the keeper may readily discover it by placing a few grains of salt in the oviduct, which hurries on the process of laying, and causes the hen to retire to the spot anew.

Feeding.—Most persons are doubtless aware that fowls swallow food without mastication. That process is rendered unnecessary by the provision of a *crop*, an organ which is somewhat similar to the first stomach of the cow, and in which the food from the gullet is macerated, and partly dissolved by secreted fluids. From the crop, the food passes downwards into a second small cavity, where it is partly acted on by digestive juice; and finally, it is transferred to the gizzard, or last stomach, which is furnished with muscular and cartilaginous linings of very great strength. In the gizzard, the partially softened food is triturated, and converted into a thin paste, fit to be received into the chyle-gut, and finally absorbed into the circulation. Such is the power of the gizzard in almost all kinds of Poultry, that hollow globes of glass are reduced in it to fine powder in a few hours. The most rough and jagged bodies do no injury to the coats of the gizzard. Spallanzani even introduced a ball of lead, with twelve strong needles so fixed in it that their points projected a fourth of an inch from the surface, and the result was, that all the needles, with the exception of one or two, were ground down in a short time to the surface of the ball, while those left were reduced to mere stumps. It is remarkable that, to add to the triturating powers of the gizzard, fowls are gifted with the instinct of swallowing stones with their food.

Fowls, when left to roam at large, pick up all sorts of seeds, grains, worms, larvæ of insects, or any other edible substances they can discover either on the surface of the ground or by scraping. They also pick a little grass as a stomachic. The more that hens can be allowed to run about to pick up their own food, the better for their own health and the pockets of their keeper. When secluded and fed altogether in an artificial manner, their keep becomes expensive, and is, on the whole, seldom compensated by their produce. We have, indeed, great hesitation in advising any one to keep fowls who cannot unexpensively give them plenty of refuse from the table or kitchen, or permit them to range in the field or lane in quest of what seems proper for their natural appetite. The very pleasure of ranging and scraping seems advantageous to the animals.

If kept in a court-yard or pen, and requiring altogether artificial feeding, their natural tastes should be consulted as far as conveniently practicable. They should be fed regularly and with a miscellaneous kind of diet; allowed at all times access to clean water for drinking, and have earth, sand, or dust, to scrape at pleasure and roll themselves in. A certain quantity of chalk or lime should also be scattered about for them to pick up, as that material is required by them in the production of eggs. Speaking on this subject, Professor Gregory of Aberdeen, in a letter to a friend, published in a newspaper, observes, "As I suppose you keep Poultry, I may tell you that it has been ascertained that, if you mix with their food a sufficient quantity of egg-shells or chalk, which they eat greedily, they will lay, other things being equal, twice or thrice as many eggs as before. A well-fed fowl is disposed to lay a vast number of eggs, but cannot do so without the materials for the shells, however nourishing in other respects her food may be; indeed, a fowl fed on food and water free from carbonate of lime, and not finding any in the soil, or in the shape of mortar, which they often eat off the walls, would lay no eggs at all, with the best will in the world."

In a state of domestication, the hard food of which fowls seem most fond are peas and barley (oats they do not like); and besides a proportion of these, they may be given crumbs of bread, lumps of boiled potatoes, not too cold, or any other refuse. They are much pleased to pick a bone; the pickings warm them, and excite their laying propensities. If they can be supplied with caterpillars, worms, or maggots, the same end will be served. Any species of animal food, however, should be administered sparingly; and the staple articles of diet must always be of a vegetable nature. When wanted for killing, the quantity of food may be increased and be more substantial; they should always be kept more within the coop. A fortnight's feeding in this way will bring a fowl of a good breed up to a plump condition.

Laying.—The ordinary productiveness of the hen is truly astonishing, as it usually lays, in the course of a year, two hundred eggs, provided it be allowed to go at liberty, is well fed, and has a plentiful supply of water. Many instances have been known of hens laying three hundred in a year. This is a singular provision in nature, and it would appear to have been intended peculiarly for the use of man, as the hen usually incubates only once in a year, although she will occasionally bring out two broods. Few hens are capable of hatching more than from twelve to fifteen eggs; so that, allowing they were all to sit twice a year, and bring out fifteen at a time, there would still be at least one hundred and seventy spare eggs for the use of man. It is therefore evident, that in situations where hens can pick up their food, they must prove very profitable; for, supposing that the eggs of one fowl during the year were sold, without any of them being hatched, they would bring (if near a large city) on an average ninepence per dozen, or fourteen shillings, and the hen herself would be worth two shillings at least. As the number of eggs which are annually brought out by a hen bear no proportion to the number which she lays, schemes have been imagined to hatch all the eggs of a hen, and thus turn her produce to the greatest advantage; so that, in place of twelve or fourteen chickens, upwards of two hundred may be produced.

Hens will lay eggs which have received no impregnation, but from these, as a matter of

course, no hatching can take place; they are equally good, however, for eating. When the chief object is to breed chickens, a cock should be allowed to walk with ten or twelve hens; but when eggs are principally required, the number of hens may be from fifteen to twenty. Endeavor to procure a cock of a good breed, not game, and let him be in his prime, which is at eighteen months to two years old. Cocks will last two years, after which they lose their liveliness of colors, and become languid, inactive, and mere consumers of food. It is fit, therefore, that younger cocks should then take their place in the poultry-yard. It is common to make choice of a young cock by pitting one or two against each other, and selecting the most courageous, which is always the favorite of the yard.

Some remarks have been made on the colors of the best hens of the different varieties. As to other qualities, M. Parmentier recommends that they should be chosen of a middling size, robust constitution, large head, bright eyes, and pendant comb. Crowers should be rejected, and those that are of [the *Caudle* family with] quarrelsome tempers, such hens being rarely good hatchers or layers. Old hens, or those above four or five years old, are of little use when added to a stock; and when the comb and claws are rough, it is a sign that they have ceased to lay.

If left to themselves, hens would produce, like some wild birds, two broods in the year.—Early spring, and, after a cessation, the end of summer are the two seasons at which they begin naturally to lay. In the depth of winter, under ordinary circumstances, hens very rarely lay eggs, though by artificial means they can be made to do so. If the temperature of the place where they are kept be raised by a stove, or otherwise, they will produce eggs. The fowls of the Irish peasantry, which are usually kept in the cabins of the owners, lay often in winter, in consequence of the warmth of their quarters; and there can be no doubt that warmth affords the most effective means of procuring new-laid eggs in winter, though stimulating food may aid in producing the same result. The fecundity of hens varies considerably. Some lay but once in three days, others every second day, and others every day. In order to induce laying, each hen should have its own nest, made with soft straw, and furnished with a piece of chalk as a decoy. The signs which indicate when a hen is about to lay are well known. She cackles frequently, walks restlessly about, and shows a brighter redness in her comb and wattles.—After the process of laying is over, she utters a loud and peculiar note, to which the other fowls usually respond. Shortly after the egg is laid, it should be removed, for the heat of the hen soon corrupts it. When the eggs are taken away by the poultry-keeper, they should immediately be laid in a cool and dry place. If allowed to absorb damp, they soon spoil; indeed, one drop of water upon the shell quickly taints the whole egg.* Various methods have been tried to prevent the absorption of air through the shell, and preserve the freshness of the eggs. A not uncommon plan is to keep them secluded from the air in bran, rye, or ashes, which may do very well where the eggs are to be kept in this way till eaten, but is utterly useless if quantities of them have to be sent to market. We beg to offer a plain piece of advice to cottagers on this subject, which, if properly acted upon, will give them the means of at all times commanding the highest price for *fresh eggs*, although situated a hundred miles or more from the place of sale. *Smear all your eggs with a bit of fresh butter the moment you get hold of them.* Do not load the shell with grease, but merely give a light varnish. The butter must be good. By this simple process of smearing, which does not taint the interior in the slightest degree, the egg is as fresh at the breakfast table when three months old as if just newly laid.—Scarcely any thing is more common than to hear complaints of the difficulty of getting fresh eggs, and all a result of the sheer negligence of fowl-keepers. By the plan we mention, there need never be such a thing as a bad egg heard of.

Hatching.—When eggs are to be hatched, it is necessary to pay attention to the choice of proper ones for the purpose. The company of the male bird renders the hen productive of fecundated eggs, and, as already noticed, it is only eggs of this kind which are available for producing young. The eggs must also be fresh; from the time they are laid, they should lie aside in a cool place. It is said to be possible to ascertain, from the appearance of the egg, whether the forthcoming progeny is to be male or female: but we greatly doubt the truth of the popular notions on this subject. When eggs are left to be brought forth by the hen, a certain number is placed under her in the nest, when she is in the full inclination to sit. From nine to twelve eggs are placed, according to the extent of the breast and wings; and the time required for hatching is twenty-one days. Sometimes a hen will desert her eggs, a circumstance which may occasionally be traced to an uncomfortable condition of the skin, caused by vermin or want of cleanliness, and this affords a strong reason for keeping the hen-house clean, and giving the animals the means of purifying their feathers. Occasionally, the hen is vicious, or, in short, a bad sitter, and experience in pitching on the best hatching hens is the only remedy.—Sometimes a hen will break her eggs with her feet, and in all such cases, the broken eggs must be removed as soon as observed, otherwise the hen may eat them, and from that may be tempted to break and eat the sound ones, and spoil the whole batch.

It has generally been found, that hens which are the best layers are the worst sitters. Those best adapted have short legs, a broad body, large wings, well furnished with feathers, their nails and spurs not too long or sharp. The desire to sit is made known by a particular sort of clucking; and a feverish state ensues, in which the natural heat of the hen's body is very much increased. The inclination, or, as physiologists term it, the *storge*, soon becomes a strong and ungovernable passion. The hen flutters about, hangs her wings, bristles up her feathers, searches every where for eggs to sit upon: and if she finds any, whether laid by herself or others, she immediately seats herself upon them.

With a proper provision of food at hand, warmth, quiet, and dryness, a good hatching hen will give little trouble, and in due time the brood will come forth; one or two eggs may perhaps remain unhatched or addled, but their loss is of little consequence. As soon as the hen hears the chirp of her young, she has a tendency to walk off with them, leaving the unhatch-

* If this be so how does it happen that the eggs of turkeys, partridges and other birds exposed to rain, are not all destroyed? [*Ed. Farm. Lib.*

ed eggs to their fate; it is therefore advisable to watch the birth of the chicks, and to remove each as soon as it becomes dry, which may be in a few hours afterwards. By this means, the hen will sit to hatch the whole; yet she should not be wearied by too long sitting. If all the eggs are not hatched at the end of twelve or fifteen hours after the first chick makes its appearance, in all probability they are addled, and may be abandoned. The chicks must be kept in a warm place during the first day, and at night restored to the mother, who now assumes her maternal duties. The food given to the young chicks should be split grits,† which they require no teaching to pick up; afterwards the ordinary food of the poultry-yard, or what the mother discovers for their use, is sufficient.—Some give the yolks of hard-boiled eggs or curd, when a nourishing diet seems advisable. The extreme solicitude of the hen for her young, or the brood which may be imposed upon her, is well known. She leads them about in quest of food, defends them by violent gesticulations and the weapons which Nature has given her, calls them around her by a peculiar clucking cry, and gathers them carefully under her wings to shelter them from danger, or to keep them warm at night. This maternal care is bestowed as long as the chickens require her assistance; as soon as they can shift for themselves, the mutual attachment ceases, and all knowledge of each other is lost. The young now go to roost, and the mother again begins to lay. Young hens, usually called pullets, begin to lay the spring after they are hatched.

Diseases.—Chickens are liable to various diseases, demanding attention from the poultry-keeper. The *pip* is the most common; it consists of a catarrhal thickening of the membrane of the tongue, causing a dangerous and obvious obstruction to respiration. It may be cured in most cases by throwing the fowl on its back, holding open the beak, and scraping or peeling off the membrane with a needle or the nail. The part may be wetted with salt or vinegar afterwards, and a little fresh butter pushed over the throat. Dr. Bechstein recommends giving a mixture of butter, pepper, garlic, and horse-radish, as an internal remedy. But the operation is most effective. *Thirst* sometimes attacks fowls like a fever, and often arises simply from dry food, though more frequently symptomatic of indigestion, or some internal and deep-seated derangement. Careful attention to diet is the first and great point in all such cases. If *constipation* appear to be present, bread soaked in warm milk, boiled carrots or cabbages, earth-worms, chopped suet, or hot potatoes with dripping, will be found useful. A clyster of sweet oil should be tried in severe cases. Where a tonic seems to be required a little iron rust may be mixed with the food, and will generally relieve atrophy or loss of flesh. Where diarrhœa or scouring is observed, iron or alum may be given in small quantities. There is also a species of influenza, called the *roup*, which is often epidemical in the poultry-yard, and causes much havoc among the young birds. The eyes become swollen, a discharge comes from the nostrils, and the fowl gapes continually, showing much difficulty of breathing. Some observers have ascribed this complaint to worms in the windpipe, and have recommended their extraction by an operation; but warmth, cleanliness, soft food, and such laxatives as sulphur, with frequent ablutions of the eyes and nostrils, are more likely, perhaps, to do good, and are not attended with danger. Where general fever has been observed in fowls, the use of a little nitre has been found very advantageous. Saffron is another remedy very often employed in relieving the symptoms of sickness in fowls.

Many of these remarks will apply equally well to the diseases of geese and the other species of domestic poultry yet to be noticed, and this subject, therefore, need not again be adverted to in detail.

TURKEYS.—The turkey, like the common chicken, has been included by naturalists in the *Gallinaceous* family of birds, and possesses the main characteristics common to the whole. It is certainly one of the most valuable fowls which have been naturalized in this country, but is very difficult to rear. The turkey-hen lays from fifteen to twenty eggs, and then sits upon them. She will bring out two broods in a year. The eggs are of a pale yellowish-white color, finely streaked and spotted with reddish-yellow. They are a most delicious food, much more delicate in their flavor than those of the common hen. In England or Scotland, however, the eggs are seldom to be met with for sale, being deemed too valuable to be used as food. In Ireland they are to be got in the markets in great abundance, especially in the midland counties, where we have bought them at ninepence per dozen. In that country, when the turkey-hen has laid about half a dozen eggs, they afterwards take away one daily, by which means the hens are induced to produce a greater number of eggs than otherwise. This they assist by means of stimulating food, such as hemp-seed and buckwheat. There is an interval of a day between the laying of each egg. It is said that the first two eggs which she lays are unfruitful. A turkey-hen can seldom hatch more than from sixteen to eighteen eggs. The time of incubation varies from twenty-seven to twenty-eight days, at which time the young begin to pierce their shelly prison, and emerge from it. When they first come forth, they are extremely weak, and much assiduous care is necessary to rear them. The first thing to be attended to is, to remove them to a situation where they are not exposed to the sun's rays, which at first are too powerful for them. A woody place is the most suitable to their natural habits. Nothing is so destructive to them as rain, from which they must be protected.

When young turkeys accidentally get wet, they should be brought into a house, carefully dried by applying soft towels to them, and then placed near a fire, and fed upon bread which has been mixed with a small proportion of ground pepper or ginger. It should be made up in the form of small peas. If the bread is too dry for this purpose, it may be moistened with a little sweet milk. Should the turkey-poults refuse to eat it, a few of these pellets may be forced down their throats. Even heavy dews prove destructive to them, and frost is no less injurious in its effects. These must, therefore, be most carefully guarded against, when the hens incubate in March or early in April. Dry and sandy situations are most congenial for breeding turkeys, and especially elevated situations where large woods are contiguous. A single male turkey is sufficient for twelve or sixteen females, although the for-

† Indian corn and corn meal are the great substitutes in our country, for other grains used in Europe, as well for poultry as for animals. [*Ed. Farm. Lib.*

mer number is probably the safest, to prevent sterility in the eggs, which is frequently the case with those of turkeys. Eggs should never be entrusted to the care of a female until she is at least two years of age, and they may be kept for the purpose of incubation till they reach their tenth year. The largest and strongest hens should always be kept for this purpose. During the time the hen is sitting, it becomes necessary to place food near her; as otherwise, from her assiduity, she may be starved to death, as turkey-hens seldom move from their nest during the whole time of incubation.

Where farmers rear turkeys in great numbers, they do not indulge the hen by allowing her to sit as soon as she has done laying, but keep them from her until all the other hens have ceased to lay, as it is of consequence that they should all be hatched about one time.—When hens are unhappy during this interval, they may be indulged with hens' eggs. When they have all ceased to lay, each of them is provided with a nest ranged close to the wall, in a barn or other convenient place, and each is supplied with from sixteen to twenty of her own eggs. The windows and doors are then closed, and only opened once in the twenty-four hours for the admission of air, and for the purpose of feeding the hens. They are taken off their nests, fed and replaced, and again shut up.—On the twenty-sixth day, the person who is entrusted with the management of the birds examines all the eggs, and removes those that are addled; feeds the hens, and does not again disturb them till the poults have emerged from their shells, and have become perfectly dry, from the heat of the parent bird; as to be subjected to cold at this time would certainly kill them. When the young birds are thoroughly dried, two of the broods are joined together, and the care of them entrusted to a single hen; and those who have been deprived of their offspring are again placed on hens' or ducks' eggs, and subjected a second time to the tedious operation of incubation, in which case it is not unusual for them to bring out thirty eggs. We cannot recommend this practice in point of humanity; for the poor hens when they have accomplished their second sitting, are literally reduced to skin and bone, and frequently so weak as hardly to be able to walk.

As before hinted at, great care should be taken of the young turkey-poults; besides warmth, proper food, and shade, the nearer they are to a pure running stream the better, as they drink a great deal, and nothing is of greater importance to their being successfully reared than fresh drink. They must be also carefully protected from strong gusts of wind, and on the slightest appearance of a thunder-storm, should be immediately taken into a house. They should get no food for twenty-four hours after they leave the egg. Their first food should be hard-boiled eggs finely chopped, and mixed with crumbs of bread. Curd is also an excellent food for them. When they are about a week old, boiled peas and minced scallions are given to them. If eggs are continued, the shells should be minced down with their food, to assist digestion, or some very coarse sand, or minute pebbles. They should be fed thrice a-day; and as they get older, a mixture of lettuce milk will be found beneficial, together with minced nettles. Barley boiled in milk is another excellent food at this period, and then oats boiled in milk. In short, the constitution of young turkeys requires at all ages every kind of stimulating food. When about three weeks old, their meat should consist of a mixture of minced lettuce, nettles, curdled milk, hard-boiled yolks of eggs, bran, and dried camomile; but when all these cannot be readily obtained, part of them must be used. Fennel and wild endive, with all plants which are of a tonic character, may be safely given to them. Too much lettuce, however, has been found to be injurious. When poults are about a month old, they should be turned out. along with the parent bird, into the fields or plantations, where they will find sufficient food for themselves. Grass, worms, all kinds of insects and snails, are their favorite food, and Nature dictates to them such vegetables as are conducive to their general health. As their feet are at first very tender, and subject to inflammation from the pricking of nettles and thistles, they ought to be rubbed with spirits, which has the effect of hardening the skin, and fortifying them against these plants.

The glandulous fleshy parts and barbles of their heads begin to develop when they are from six weeks to two months old. This is a critical period with the poults, and unusual care must be bestowed on them, as they now become weak and often sickly. A little brine mixed with their food will be found very beneficial, or spirits much diluted with water. A paste made of fennel, pepper, hemp-seed, and parsley, has been found an excellent remedy when afflicted with an inflammation in the wattles, to which they are liable when growing.—They are very subject to this if the weather happens to be broken and changeable at the time these tubercles are growing. These parts swell and grow very red, which frequently proves fatal to them. If, therefore, such be the state of the weather at this critical period, the paste above recommended should be given although they are perfectly healthy, which will be found an excellent preventive. When the inflammation becomes very great, recourse is often had to bleeding in the axillary vein, which frequently recovers them.

Soon after the turkey-poults have acquired their first feathers, they are liable to a disease which is very fatal to them, if not attended to. This distemper produces great debility, and the birds appear languid and drooping, and almost totally neglect their food. Their tail and wing-feathers assume a whitish appearance, and their plumage has a bristled aspect. This is occasioned by a disease in two or three of the rump-feathers. On examination, the tubes of these will be found filled with blood. The only remedy for this disease is to pluck them out, when the bird will speedily acquire its wonted health and spirits.

In fattening turkeys for the table, various methods are resorted to. Some feed them on barley meal mixed with skim milk, and confine them a coop during this time; others merely confine them to a house; while a third class allow them to run quite at liberty; which latter practice, from the experience of those on whose judgment we can most rely, is by far the best method. Care should, however, be taken to feed them abundantly before they are allowed to range about in the morning, and a meal should also be prepared for them at mid-day, to which they will generally repair homewards of their own accord. They should be fed at night, before roosting, with oat-meal and skim-milk;

and a day or two previous to their being killed, they should get oats exclusively. We have found, from experience, that when turkeys are purchased for the table, and cooped up, they will never increase in bulk, however plentifully they may be supplied with food and fresh water, but, on the contrary, are very liable to lose flesh. When feeding them for use, a change of food will also be found beneficial.—Boiled carrots and Swedish turnips, or potatoes mixed with a little barley or oat-meal, will be greedily taken by them. A cruel method is practiced by some to render turkeys very fat, which is termed cramming. This is done by forming a paste of crumbs of bread, flour, minced suet, and sweet-milk, or even cream, into small balls about the bulk of a marble, which is passed over the throat after full ordinary meals.

THE GUINEA-FOWL.—This stranger is found native in Africa, as its name indicates, and it also exists in an indigenous state in South America. The Guinea-fowl or Pintado is about the size of the common hen, and the male differs very little in appearance from the female. Three species exist in considerable numbers in Europe, namely, the crested, the mitred, and Egyptian varieties. A very beautiful sort is marked by a pure white tint of body, but the most familiar hues are dark-grey and black.—The bird is less tame than other common poultry, and prefers to live in a half-wild condition in its native regions, perching and living on trees, like undomesticated birds. It is a spirited creature, and will battle even with the turkey. The guinea-hens require great attention at the time of laying, making their nests by preference in corners of the woods. The common hen is usually made to rear their broods. In the market, guinea-fowls always bear a high price, both on account of their flesh, which is of a good quality, and because they form a very pretty variety of the poultry stock. Their food is grain, of the various kinds given to ordinary barn-door fowls, with which they assimilate closely in habits.

THE GOOSE.—The goose differs in many respects from the fowls already noticed, being aquatic in its habits. It is marked by a flat bill and webbed feet, characters also possessed by the duck and swan, which in conjunction with the goose, may be held as forming a distinct family *(Anatidæ)* of the feathered aquatic tribes.

Our common tame goose is the wild species domesticated, known to naturalists by the name of the fen or stubble-goose. Where people have a right of common, or live in the vicinity of marshy heaths, the breeding and rearing of geese will prove very profitable, for in such situations they are kept at a trifling expense; they are very hardy, and live to a great age. If properly kept, and fed regularly, although sparingly, they will lay upwards of a hundred eggs yearly. If these are set under large hens each having half a dozen, with the assistance of the goose herself, they may be nearly all hatched.—For the first three or four days they must be kept warm and dry, and fed on barley meal or oat-meal mixed with milk, if it is easily procured; if not, let these ingredients be mixed with water. They will begin to grow in about a week. For a week or two the goslings should not be turned out till late in the morning, and should always be taken in early in the evening. In Ireland, the tenantry depend much on the breeding of these birds and turkeys to pay their rent; and with those who are industrious and favorably situated for rearing geese, they even do more in many instances. In the early part of the year they are allowed to feed on grass, on heaths, meadows, and commons; and as most of the peasantry have small bits of corn land of their own, the geese are turned out on the stubble to pluck what grass is is left; and they also fatten upon it, and improve the flavor of their flesh.

Although water be the natural element of geese, yet it is a curious fact that they feed much faster in situations remote from rivers and streams. To fatten geese it is necessary to give them a little corn daily, with the addition of some raw Swedish turnips, carrots, mangel-wurzel leaves, lucerne, tares, cabbage leaves, and lettuces. They should not be allowed to run at large when they are fattening, as they do not acquire flesh nearly so fast when allowed to take much exercise. Therefore, those who can only afford to bring up a goose or two, should confine them in a crib or some such place about the beginning of July, and feed them upon the ingredients above recommended, with a daily supply of clean water for drink. If, on the contrary, from a dozen to twenty are kept, a large pen of from fifteen to twenty feet square must be made, and well covered with straw in the bottom, and a covered house in a corner for protection against the sun and rain when required, because exposure to either of these is not good. It will be observed that, about noon, if geese are at liberty, they will seek some shady spot to avoid the influence of the sun; and when confined in small places, they have not sufficient room to flap their wings and dry themselves after being wetted; nor have they room to move about so as to keep themselves warm. There should be three troughs in the pen, one for dry oats, another for vegetables—which ought always to be cut down—and a third for clean water, of which they must always have a plentiful supply. It must be remembered that the riper the cabbages and lettuces which they are supplied with the better. In the neighborhood of large towns, the most profitable way of disposing of geese is in a dead state; as nearly the same sum can be obtained for them as if they were alive, and then you have the feathers, which are valuable, and may be sold to much advantage by themselves when you have collected a stone weight or more.

Geese are kept in vast quantities in the fens of Lincolnshire, several persons there having as many as a thousand breeders. They are bred for the sake of their quills and feathers, as well as for their carcass; it is therefore customary to strip them partially of the fine downy feathers, and leave them to grow afresh, and also to take quills from their wings—both practices barbarous in the extreme, however they may be attempted to be justified. Geese breed in general only once a year, but if well kept, they sometimes hatch twice in a season. The best method for promoting this is to feed them with corn, barley, malt, fresh grains, and, as a stimulant, they should get a mixture of pollard and ale.—During their sitting, each bird has a space allotted to it, in rows of wicker pens placed one above another, and the goose-herd who has the care of them drives the whole flock to water thrice a-day, and, bringing them back to their habitation, places every bird (without missing

one) in its own nest. One gander is generally put to five geese. The time of incubation varies from twenty-seven to thirty days. The goose begins to lay in March, but the time of the month depends upon the state of the atmosphere. When goslings are first allowed to go at large with their dam, every plant of hemlock which grows within the extent of their range should be pulled up, as they are very apt to eat it, and it generally proves fatal to them. Nightshade is also equally pernicious to them, and they have been known to be poisoned by eating sprigs of yew-tree.

Ducks.—Ducks are a kind of fowl easily kept, particularly near ponds or streams of water. In such situations, even the poorest families may have half a dozen of them running about without the least inconvenience. In keeping them in a domestic state, one drake is usually put to five ducks. The ducks begin to lay in February; their time of laying being either at night or early in the morning. They are extremely apt to deposit their eggs in some sequestered spot, and to conceal them with leaves or straw. From eleven to fifteen eggs is the number which a duck can properly cover. The time of incubation is about thirty-one days. The place where they incubate should be as quiet and retired as possible: and if they have liberty, they will give no trouble whatever in feeding, as the duck, when she feels the call of hunger, covers her eggs carefully up, and seeks food for herself, either by going to the streams or ditches in her neighborhood, or, if such are not at hand, she will come to the cottage and intimate her wants by her squalling. When the young are hatched, they should be left to the care of the duck, who will lead them forth in due time; and when she does so, prepare a coop for them, which should be placed on short grass, if the weather is mild; and if cold or stormy, they should be kept under cover. The future strength of the brood will depend much upon the care that is taken of them for the first three or four weeks after they have emerged from the shell. Ducklings will begin to wash themselves the first day after they are hatched, if they find water at hand. Therefore, a flat dish filled with that element should be always within their reach. Many persons are in the practice of clipping the tail, and the down from beneath it, in ducklings, if the weather is wet during the first weeks of their existence. This to prevent them from dragging themselves, which has a tendency to produce intestinal diseases. From a fortnight to three weeks is all that is necessary to confine them to the coop.

The first thing on which ducklings are fed is a mixture of barley, peas, or oat-meal, and water. They may afterwards be fed upon a mixture of buckwheat and any of the above-named meals. The greatest attention must be paid to keeping their bed warm and dry; and with young ducks a frequent change of straw is absolutely necessary, as their beds soon get dirty and wet.

Ducks are not such attentive guardians of their young as hens, and therefore it is a common practice to place duck eggs under a sitting hen, and leave her to hatch them as her own progeny. When the young ducks so hatched make their appearance, the hen does not appear aware of the imposition, but takes at once to her duties with all a mother's fondness. The natural desire of the ducklings to plunge into water and swim away from the shore vexes her, but she watches for their return, and does all in her power to provide the means of subsistence. She scrapes for them, which a duck would not; she shelters them under her dry and warm bosom and wings, and altogether makes a better nurse than their own proper parent.

In feeding ducks for use, peas and oat-meal are to be preferred. It is said that barley meal renders their flesh soft and insipid. Bruised oats should be given to them freely for some weeks before they are killed, which renders their flesh solid and well tasted; and the same general principles recommended in the feeding of geese should be kept in view. It has been found that the offal of butchers' shops feeds ducks quickly, and that this does not impair the flavor of their flesh. In very many instances, ducks are reared in situations where there are no pools of clean water for them to dabble in, and the poor animals are compelled to grub with their bills in all sorts of nauseous puddles, which, of course, makes their flesh rank and offensive. They should in all cases have a pool of clean water to swim in, and are best reared near a natural meadow, where they can search for their appropriate food.

Those who have paid much attention to the management of domestic poultry, assert that geese and ducks should be kept apart from other fowls. The former should have their houses ranged along the banks of a piece of water with a fence, and sufficiently extensive for walks in front, with doors for their access to the water, which can be closed at pleasure.

Swans.—Swans are a class of aquatic fowls kept for ornament rather than use. The flesh, even of the young, is black, hard, and rank, while that of the old is too tough for mastication. The eggs, also, are not peculiarly palatable; and there is little inducement to rear them, in short, if mere pecuniary advantage be looked to, excepting on the score of the skin, feathers, and down, which are articles of considerable value. At the same time, if the swan be not a productive bird, few animated objects can be compared with it as regards ornament. Its great size, snow-white plumage, and graceful form, render it a most attractive spectacle upon the bosom of a pool or loch. It is a hardy, long-lived fowl, and associates in pairs. The food of the swan consists usually of seeds, roots, and plants, rendered succulent by water. When fed in a barn-yard it seldom thrives, being more decidedly aquatic in its habits than ducks or geese. From the color of the European swan being so uniformly white, a black swan used once to be proverbially spoken of as an impossibility, but black swans have been found of late in Australia.

Pigeons.—Pigeons are among the most ornamental and useful appendages of a rural dwelling. If permitted to fly abroad to seek their food, little expense will be incurred for their keep, while the value of their young will be of some importance to cottagers. The pigeon has a great power of flight, and will go to a distance of many miles in quest of the means of subsistence; but wherever it may fly, it never fails to return home. The leading features of the district around its habitation appear to be impressed on its memory, and, flying at a great hight, and with a wonderful power of vision, it sees the well-remembered landmarks, and directs its path homeward. This habit of seeking for the place at which it was reared, makes it difficult to keep pigeons in any new home;

the best plan of inducing them to settle in a new abode, is to clip one wing, which prevents their flying; and keep them in a cot near the ground, till they get accustomed to the place.

Many persons keep their pigeons in the space between the garret and roof of their dwelling house, with holes at which they go out and in; and this arrangement answers very well, for the animal's lodging must be dry and comfortable. A more regular plan is to furnish them with a properly-constructed dove-cot, aloof from any building. The cot should consist of a substantial wooden box, with a sloping roof, and divided interiorly by partitions into as many cells as pairs are to be kept, for each pair requires a distinct cell. Each cell should be twelve inches deep from front to back, and sixteen inches broad; the entrance hole should not be opposite the centre of the cell, but at a side, so that the pigeons may build their nest a little out of sight. In front of each cell there should be a slip of wood to rest and coo upon; but as different pairs incessantly quarrel about the right of walking on these slips, and are apt to fight for the possession of cells, it is best to separate the slips with upright partitions; and it would be an improvement to have two or three small cots instead of one large one. The cot, of whatever size or form, should be elevated on a wall facing the south-east, or otherwise placed at such a hight as will be out of the reach of cats and other vermin. The cot should be painted white, as the pigeon is attracted by that color. Gravel should be strewed on the ground in front of the dove-cot, the birds being fond of picking it; and a little straw or hay is necessary for the nests. Cleanliness is indispensable to the health of the birds, and a scouring out of the cot should therefore take place regularly. The quantity of dung produced in the nests is very great, and its removal to the compost heap will amply repay the trouble of cleaning.

In commencing to keep pigeons, a pair or two should be procured which have not flown, and they should be shut up for a time, and well fed. Their chief food is grain, and the kind which they prefer to all others is dried tares. Small horse-beans are another favorite article of diet, and very nutritious to them. Wheat, barley, oats, and peas, with rape, hemp, and canary seeds, are also prized by them, but should not be made constant articles of food under any circumstances.

The house-dove or common pigeon, as is well known, begins to breed about the age of nine months, and breeds every month. During breeding time, they associate in pairs, and pay court to each other with their bills; the female lays two eggs, and the young ones that are produced are for the most part a male and female. When the eggs are laid, the female, in the space of fifteen days, not including the three days during which she is employed in laying, continues to hatch, relieved at intervals by the male.—From three or four o'clock in the evening, till nine the next day, the female continues to sit; she is then relieved by the male, who takes his place from ten till three, while his mate is feeding abroad. In this manner they sit alternately till the young come out. Kept with ordinary care a pair will give to the breeder nine pairs or so in a year, and will continue to do this for four years.

With regard to the best breeds of the common domesticated pigeon, it is difficult to give any useful instructions. They have been cultivated to a great extent, and many distinct varieties have been formed, but the differences rest chiefly in colors, and the special value of each lies in the taste of the *fancier*. The leading varieties of fancy pigeons are known by the names of the English Pouter, the Dutch Cropper, the Horseman, the Unloper, the Dragoon, the Tumbler, the Leghorn and Spanish Runt, the Trumpeter, the Nun, the Fan-tail, and the Capuchin. The peculiarities of some of these breeds are very odd. The tumbler, for instance, derives its name from a practice of tumbling in the air while on the wing. Instead of pursuing a steady straightforward flight, it turns over, or casts somersets backward, whirling round heels over head as expertly as a first-rate rope-dancer does when he makes the back spring. The fan-tail derives its name from the circumstance of its having a remarkably broad tail, which it has the power of spreading out like the tail of a turkey-cock. The prime quality of the bird consists in its ability to make its tail touch its head, and surround it with a wide glory of feathers, If it cannot do this, it is valueless to the fancier, no matter how excellent are its other properties. Amusing as this absurdity is, it is not so laughable as the qualities which recommend the English pouter to public favor. This bird, which is a cross between a Horseman and Cropper, possesses the remarkable property of blowing out its breast or crop to such an extent that it rises to a level with its beak, and the bird appears to look over the top of an inflated bladder.

Carrier Pigeons.—Pigeons have been put to the remarkable purpose of acting as carriers for letters or other light objects. A particular species, larger than common, is trained for the purpose, and in some countries the rearing of them forms a lucrative employment. The instinct which has rendered the carrier-pigeon so serviceable, is the strong desire manifested by all pigeons to return to the place of its ordinary residence; and man has adopted various precautionary measures in order to makes its return on particular occasions more certain. A male and female are usually kept together and treated well; and one of these, when taken elsewhere, is supposed to have the greater inducement to come back. It is even considered necessary by some that the bird should have left eggs in the process of incubation, or unfledged young ones, at home, in order to make the return certain; but probably these are superfluous precautions. It is obvious that the carrier-pigeon can only be put to use in conformity with some contemplated plan, for which the proper preparations have been made. It must have been taken from a place to which it is wished that it should return, and it must, at the moment when its services are wanted, be temporarily at the place from which the intelligence is to be conveyed. It is usually taken to that place hoodwinked, or in a covered basket; the instinct by which it finds its way back upon its own wings, must of course be independent of all knowledge of the intermediate localities. When the moment for employing it has arrived, the individual requiring its services writes a small billet upon thin paper, which is placed lengthwise under the wing, and fastened by a pin to one of the feathers, with some precautions to prevent the pin from pricking, and the paper from filling with air. On being released, the carrier ascends to a great hight, takes one or two turns in the air, and then commences its forward career, at the rate of forty miles in the hour, or about a thousand a day.

SUCCESSFUL EXPERIMENTS IN SOILING,

AVERAGE PRODUCE OF WHEAT IN OHIO—HOW MUCH WHEAT PER ACRE WILL PAY.

WHEN to soil milch cows—and when not—is a problem to be solved by a consideration of circumstances which can only be duly taken into account by every man for himself—for he only can know the quantity and kinds of food he will have at command—the extent and nature of the pasturage to be referred to in making the comparison, the expense of labor, and other items necessary to a safe conclusion. The question in itself is one of so much practical importance, that we shall occasionally present such views of it as fall within our reach, leaving the intelligent reader to decide how the circumstances tally with his own. About one thing there can be no mistake—that if we would stay the general progress of the country towards extreme exhaustion—prompting land-holders, even in comparatively new States, to sell out, and clear out; we must be more universally and deeply impressed with the indispensable importance of every year collecting the greatest quantity of manure *that can from every source and by every means be accumulated*—for not a plant of tobacco or corn can be reared, not a stalk of grain can be reaped, nor a spear of grass be cut, nor a potato dug, that does not subtract something much beyond what it can restore to the soil. Hence it is that already the fine wheat lands of Western New-York have been brought down, (for example, in Seneca County,) on the undenied belief of the most experienced and intelligent millers in Rochester, to an average of only ten or eleven [from twenty] bushels an acre—an amount of which the most careless tenant or cultivator in England would be ashamed, and one which *will not pay* expenses of production in any slave-holding country, where wheat is the principal crop. We say in a slave-holding country, because there, there are many idle months not employed in its cultivation. Wheat, or what we call small grain crops, are those to the production of which labor may and should be exactly adapted—that is to say, there should be no superfluous idle months, if avoidable, consuming the substance of the farm and the farmer in the long interval between sowing and reaping. Growing wheat is a case in which the expense of outlay and income may be calculated with more exactness than can be attained in most others, and we should much doubt whether, in Maryland or Virginia, a *wheat estate*, especially one at any distance from tide water and a market, can pay expenses where the yield is not over ten bushels to the acre, and the net market price not over $1, after charging say *three per cent* on the value of the land, or what the owner would ask for it, and deducting all expenses of inanimate and animate power—kept all the year, whether at work on the wheat or not—we should be glad to have the views and figures of some of our friends on this point.

In a clear and intelligent circular of a distinguished house in New Orleans—GORDON, WILEY & Co.—they state that the average product of *Ohio* even, that comparatively new and fertile State, is not over ten bushels of wheat to the acre—and there, too, the land-killer, seeing the prospect before him, is falling into and swelling the stream of emigration as it passes his door, to the Far West.

The prominent advantages of soiling, our readers need not be told, is that it may be practiced on a smaller quantity of land than is necessary under an exclusively grazing system, and yet more, that it contributes to the *accumulation of manure*. And the young farmer must be blind and infatuated, he must wilfully shut his eyes against the ruin that is coming to overtake him, as surely as the sparks fly upwards, if he does not somehow contrive to restore, year by year, to his land, as much of the elements necessary to sustain his crops as these crops take and carry away from it, whenever they are carried to market for sale. The process of exhaustion may be slower or faster, according to circumstances, but his land that is cropped can no more re-fertilize and invigorate itself, than his pocket can replenish itself with that money which has, according to Scripture, made itself wings and flown away. It is to be regretted that the comparative *results* of soiling and pasturage were not more exactly given in the following, which we find in that excellent Journal, the London Agricultural Gazette. It is clear, however, that the experimenter was satisfied with the result of the soiling part of the experiment. The reader will note, without being prompted, that Mr. Smith says—"About one-fourth part of the labor

of a man was sufficient for cutting and carrying the grass, and with the aid of a pony and cart, when the place from which he had to carry the food became distant. He also supplied the cows with straw and water, and carried out the dung, and he dressed the cows once a day, with a whalebone brush."

The question here suggests itself—whether the same work would not occupy the whole time, and even more than the time of one laborer, slave or hired man, in our country? When Mr. Colman expressed the belief that a laboring man in England "does not accomplish nearly as much as an American laborer," he adds, in way of explanation—"I speak of cases in which the American is working for himself, the Englishman for another. In cases where work is taken by the piece or job, as in harvest, for example, there seems to be no want of application or success, on the part of the English laborer."

This is probably the true solution of the success of the Eastern farmers, who on very small farms, are seen to rear their families in comfort and credit. The work is mostly done by the farmer himself, or his family; all of whom feel a common interest in the result. But for hired free labor in this country, left to itself, and unaccompanied and unobserved by the employer, we much doubt whether the performance is equal to that of European laborers. It is difficult, in fact, to find American hirelings. Every man, happily, is setting up for himself—few that do n't aspire to, and few who do not succeed in getting freeholds for themselves. On the Indian Hill farm, where management, industry and sagacity go hand in hand, preference is given to Scotch laborers. For interesting remarks on the difference between animal and mental force, and a comparison of the physical strength of men of different nations, see the chapter on these subjects, in this number of the Farmers' Library.

In the summer of 1841, a dairy of 20 cows, consisting of part Ayrshire breed, and part a cross from Ayrshire cows and a short-horned bull, were separated into two lots of 10 each, selected to be as equal as possible, in point of carcass, condition, and milking quality. The one lot was, about the beginning of May, put to pasture in the usual manner, going to the field about seven in the morning, after having been milked, again being brought home to be milked about one o'clock, and again being driven out at two o'clock to the field; and at seven in the evening again being brought home to be milked, and remaining in the house all night, having some turneps and straw, during the first few weeks, and thereafter cut grass. Towards midsummer they were put out all night, and kept in the house from twelve till four, getting cut grass, vetches, and a little straw; and from 1st September, being again kept in all night, getting cut grass, vetches, and straw. The cows of the other lot were tied up in a wooden house, erected for the purpose, in a field of sown grass, from which they were to be fed, near a field of vetches. The byre was constructed to hold five cows at each end, with boards to open in front of each cow, to let the grass be put into their stalls, and to admit an abundance of fresh air during the day. There was a large tun or cask sunk in the ground outside the house, to receive the urine flowing from the cows; near this tank the dung from the cows was placed in layers on the surface of the ground, and the water was occasionally taken from the tank in buckets, and thrown over the dung to keep it moist, and to promote its decomposition, channels being formed in the ground round the dung-heap to conduct such fluid as might flow from the heap into the tank. The cow-water being so repeatedly passed through the dung-heap, whilst it promoted its conversion to well-made dung, became itself enriched, and was in a fit state for being applied to the surface of the ground as a liquid manure. These cows were fed with cut grass from the field in which the house was placed and, towards the latter part of the season, with a proportion of vetches cut from an adjoining field. About one-fourth part of the labor of a man was sufficient for cutting and carrying the grass, and with the aid of a pony and a cart, when the place from which he had to carry the food became distant. He also supplied the cows with straw and water, and carried out the dung, and he dressed the cows once a day with a whalebone brush. The cows were never removed from their stakes from the time they were put up until the 1st of November, when they were taken back to the dairy, to be tied up for the winter with the other cows, excepting when they had to be taken to receive the bull. It required some care on the part of the keeper to observe when they came into condition for that process. The cows thus treated were milked three times a day, as the others were—they gave their milk more uniformly and more plentifully, and continued throughout in excellent health and improved in condition from 30s. to 40s. per head over those at pasture. When removed to the dairy they still continued in excellent health and condition during the winter, and had their calves in spring in proper time, and of large and healthy frame. The manure made was of value, considerably above the extra charge for management; and the cows were kept in summer on three quarters of a statute acre each. Those on pasture required only one and a quarter acre of pasture, and nearly a quarter acre for cut grass and vetches; so that, upon the whole, about one-half of the extent of ground necessary for the summer keep of cows at pasture was sufficient for those kept in the house.

[Ayrshire Agriculturist.

ANIMAL AND MENTAL FORCE.

Difference between them—Strength of men of different Nations compared.

In every industrial occupation there are actually involved two totally distinct offices, which are paid for in very different degrees. These are the animal force, and the mental exertion which directs it. The question of relative cheapness or dearness of labor altogether depends on the relative proportions we want of those, and the proportions in which they are possessed by the man we hire. Now, owing to the general absence of industrial activity in this country, the mental power is not at all so universal as in Britain. It is hence dearer in

Ireland, whilst animal force, destitute of industrial skill, being less abundant in Great Britain, is dearer there than it is with us. A bricklayer in London gets 22s. per week, and his laborer 14s.; a bricklayer in Dublin gets 25s. per week, and his laborer but 9s. These proportions are often said to be caused by combination and threats against employers. It is not so; the fact being that men who know how to set bricks are proportionally more abundant in London, and men who do not know how to do it are more abundant with us. This diversity produces both the power of combining, and the difference of wages.

Considering man merely as a source of animal power, it is gratifying to have it proved, that when at all well fed, there is no race more perfectly developed, as to physical conformation, than the inhabitants of this island. Professor Forbes instituted an extensive series of observations of the size and strength of the students attending the University of Edinburgh, who may be considered as fairly representing the middle classes of their respective countries; and I have subjoined the similar results of Professor Quetelet, regarding the students of the University of Bruxelles. The strength indicated is that shown by pulling out the stem of a spring dynamometer.

	Av. hight in inches.	*Av. weight in pounds.*	*Av. strength in pounds.*
English,	68½	151	403
Scotch,	69	152½	423
Irish,	70	155	432
Belgians,	68	150	339

The Irish are thus the tallest, strongest, and heaviest of the four races.

Mr. Field, the eminent mechanical engineer of London, had occasion to examine the relative powers of British and Irish laborers to raise weights by means of a crane. He communicated his results to the Institute of Civil Engineers in London. He found that the utmost effort of a man lifting at the rate of one foot per minute ranged:

Englishmen, from 11,505 lbs. to 24,255
Irishmen, " 17,325 " 27,562
The utmost effort of a Welshman was 15,112.

AGRICULTURAL RESOURCES AND PRODUCTS OF THE UNITED STATES AND GREAT BRITAIN.

THERE are so many occasions in the prosecution of practical inquiry that demand the means of ready reference to the most authentic reports of the agricultural products of the country, that we have concluded to transfer the following tables to our columns, from "Tucker's Progress of the United States," in which we find, in the most convenient form, the only philosophical and reliable use that has been made of the census of our population and industry up to 1840.

Would that it were within the bounds of possibility, that some such man as he or Chancellor Blaud of Maryland, with minds elevated far above the murky atmosphere of party, could be employed to frame the instructions for taking the next census—and for presenting biennially, which would be often enough, through the National Institute, or otherwise, authentic data, and politico-economical suggestions, on the existing resources of the country, and the means of their farther development and direction. How much more permanently useful—how much better calculated to command respect and confidence, than the crude, ill-digested, vague and unofficial scraps, gathered and strung together from agricultural and other papers, and sprinkled here and there with Munchausen stories, merely to *make a momentary sensation!* until the season comes round for batching out a new brood of humbugs, and for the letting loose of which indictments ought to be issued as for spreading false information.

There is such a general and natural disposition among all inquiring readers and statesmen, and we may presume legislators who represent the agricultural interest of the country, to compare the elements of our national subsistence and growth with those of the country from which we sprung, and with which we have most commercial and social intercourse; the country whose constitution and laws we have most nearly followed, whose language we speak and whose blood we inherit—and, for all these reasons the nation with which we should be most desirous of maintaining, not merely peaceable, but friendly relations; that we presume it may prove not merely acceptable, but useful to give also, as will be found, the most recent and authentic views of the *wealth and resources of the British Empire.*

We are reluctant to believe that in appropriating so little space for information so condensed, we shall be met by the narrow-minded inquiry —What light do these tables throw on the way to make the *most corn grow on an acre of land?* That has been taught in agricultural annals and essays thirty years ago, and a thousand times over, but it is no small gratification to us to believe that our patrons will be pleased to have their minds invited to the contemplation of and inquiry into subjects which lie beyond, though in a political or literary point of view they are closely connected with, what is growing in their own fields. If we are mistaken in this, we have counted without our host in the establishment of a FARMERS' LIBRARY.

AGRICULTURE.

LIVE STOCK—CEREAL GRAINS.

STATES AND TERRITORIES.	LIVE STOCK.					CEREAL GRAINS.					
	Horses & Mules.	Neat Cattle.	Sheep.	Swine.	Est. Value of Poultry.	Bushels of Wheat.	Bushels of Barley.	Bushels of Oats.	Bushels of Rye.	Bushels of Buckwh't.	Bushels of IndianCorn.
Maine	59,208	327,255	649,264	117,386	$123,171	848,166	355,161	1,076,409	137,941	51,543	950,528
New-Hampshire	43,892	275,562	617,390	121,671	107,092	422,124	121,899	1,296,114	308,148	105,103	1,162,572
Massachusetts	61,484	282,574	378,226	143,221	178,157	157,923	165,319	1,319,680	536,014	87,000	1,809,192
Rhode Island	8,024	36,891	90,146	30,659	61,702	3,098	66,490	171,517	34,521	2,979	450,498
Connecticut	34,650	238,650	403,462	131,961	176,629	87,009	33,759	1,453,262	737,424	303,043	1,500,441
Vermont	62,402	384,341	1,681,819	203,800	131,578	495,800	54,781	2,222,584	230,993	228,416	1,119,678
New-York	474,543	1,911,244	5,118,777	1,900,065	1,153,413	12,286,418	2,520,068	20,675,847	2,979,323	2,287,885	10,972,286
New-Jersey	70,502	220,202	219,285	261,443	336,953	774,203	12,501	3,083,524	4,665,820	856,117	4,361,975
Pennsylvania	365,129	1,172,665	1,767,620	1,503,964	685,801	13,213,077	209,893	20,641,819	6,613,873	2,113,742	14,240,022
Delaware	14,421	53,883	39,247	74,228	47,265	315,165	5,260	927,405	33,546	11,299	2,099,359
Maryland	92,220	225,714	257,922	416,943	218,765	3,345,783	3,594	3,534,211	723,577	73,606	8,233,086
Virginia	326,438	1,024,148	1,293,772	1,992,155	754,698	10,109,716	87,430	13,451,062	1,482,799	243,822	34,577,591
North-Carolina	166,608	617,371	538,279	1,649,716	544,125	1,960,855	3,574	3,193,941	213,971	15,391	23,893,763
South-Carolina	129,921	572,608	232,981	878,532	396,364	968,354	3,967	1,486,208	44,738	72	14,722,805
Georgia	157,540	884,414	267,107	1,457,755	449,623	1,801,830	12,979	1,610,030	60,693	141	20,905,122
Alabama	143,147	668,018	163,243	1,423,873	404,994	828,052	7,692	1,406,353	51,008	58	20,947,004
Mississippi	109,227	623,197	128,367	1,001,209	369,482	196,626	1,654	668,624	11,444	61	13,161,237
Louisiana	99,888	381,248	98,072	323,220	283,559	60	.....	107,353	1,812	.....	5,952,912
Tennessee	341,409	822,851	741,593	2,926,607	606,969	4,569,692	4,809	7,035,678	304,320	17,118	44,986,188
Kentucky	395,853	787,098	1,008,240	2,310,533	536,439	4,803,152	17,491	7,155,974	1,321,373	8,169	39,847,120
Ohio	430,527	1,217,874	2,028,401	2,099,746	551,193	16,571,661	212,440	14,393,103	814,205	633,139	33,668,144
Indiana	241,036	619,980	675,982	1,623,608	357,594	4,049,375	28,015	5,981,605	129,621	49,019	28,155,887
Illinois	196,235	626,274	395,672	1,495,254	309,204	3,335,393	82,251	4,988,008	88,197	57,884	22,634,211
Missouri	196,032	433,875	348,018	1,271,161	270,647	1,037,386	9,801	2,234,947	68,608	15,318	17,332,524
Arkansas	51,472	188,786	42,151	393,058	109,468	105,878	760	189,553	6,219	88	4,846,632
Michigan	30,144	185,190	99,618	295,890	82,730	2,157,108	127,802	2,114,051	34,236	113,592	2,277,039
Florida	12,043	118,081	7,198	92,680	61,007	412	30	13,829	305	.....	898,974
Wisconsin	5,735	30,269	3,462	51,383	16,167	212,116	11,062	406,514	1,965	10,654	379,359
Iowa	10,794	38,049	15,354	104,899	16,529	154,693	728	216,385	3,792	6,212	1,406,241
District of Columbia	2,145	3,274	706	4,673	3,092	12,147	294	15,751	5,081	272	39,485
Total	4,335,669	14,971,586	19,311,374	26,301,293	9,344,410	84,823,272	4,161,504	123,071,341	18,645,567	7,291,743	377,531,875

AGRICULTURE.....VARIOUS CROPS.

WOOL—HOPS—WAX—POTATOES—HAY—HEMP AND FLAX—TOBACCO—RICE—COTTON.

STATES AND TERRITORIES.	Wool. *Pounds.*	Hops. *Pounds.*	Wax. *Pounds.*	Potatoes. *Bushels.*	Hay. *Tons.*	Hemp & Flax. *Tons.*	Tobacco Gathered. *Pounds.*	Rice. *Pounds.*	Cotton Gathered. *Pounds.*
Maine	1,465,551	36,940	3,723½	10,392,280	691,358	38	30	.....	.....
New-Hampshire	1,260,517	243,425	1,345	6,206,606	496,107	26¼	115	.....	.....
Massachusetts	941,906	254,795	1,196	5,385,652	569,395	2½	64,955	.....	.....
Rhode Island	183,830	113	165	911,973	63,449	½	317	.....	.....
Connecticut	889,870	4,573	3,897	3,414,238	426,704	41½	471,657	.....	.....
Vermont	3,699,235	48,137	4,660	8,869,751	836,739	29¼	585	.....	.....
New-York	9,845,295	447,250	52,795	30,123,614	3,127,047	1,130¾	744	.....	.....
New-Jersey	397,207	4,531	10,061	2,072,069	334,861	2,165½	1,922	.....	.....
Pennsylvania	3,048,564	49,481	33,107	9,535,663	1,311,643	2,649½	325,018	.....	.....
Delaware	64,404	746	1.088	200,712	22,483	52¾	272	.....	334
Maryland	488,201	2,357	3,674	1,036,433	106,687½	488	24,816.012	.....	5,673
Virginia	2,538,374	10,597	65,020	2,944,660	364,708½	25,594¼	75,347,106	2,956	3,494,483
North-Carolina	625,044	1,063	118,923	2,609,239	101,369	9,879⅓	16,772,359	2,820,388	51,926,190
South-Carolina	299,170	93	15,857	2,698,313	24,618	.....	51,519	60,590,861	61,710,274
Georgia	371,303	773	19,799	1,291,366	16,969¾	10¾	162,894	12,384,732	163,392,396
Alabama	220,352	825	25,226	1 708,356	12,718	5	273,302	149,019	117,138,823
Mississippi	175,196	154	6,835	1,630,100	171	16	83,471	777,195	193,401,577
Louisiana	49,283	115	1,012	834,341	24,651	.....	119,824	3,604,534	152,555,368
Tennessee	1,060,332	850	50,907	1,904,370	31,233	3,344¼	29,550,432	7,977	27,701,277
Kentucky	1,786,847	742	38,445	1,055,085	88,306	9,992¼	53,436,909	16,376	691,456
Ohio	3,685,315	62,195	38,950	5,805,021	1,022,037	9,080¼	5,942,275	.....	.....
Indiana	1,237,919	38,591	30,647	1,525,794	178,029	8,605¼	1,820,306	.....	180
Illinois	650,007	17,742	29,173	2,025,520	164,932	1,976¼	564,326	460	200,947
Missouri	562,265	789	56,461	783,768	49,083	18.010¾	9,067,913	50	121,122
Arkansas	64,943	.....	7,079	293,608	586	1,039¼	148,439	5,454	6,028,642
Michigan	153,375	11,381	4,533	2,109,205	130,805	755¼	1,602	.....	.....
Florida	7,285	.....	75	264,617	1,197	2	75,274	481,420	12,110,533
Wisconsin	6,777	133	1,474	419,608	30,938	2	115	.....	.....
Iowa	23,039	83	2,132	234,063	17,953	313¼	8,076	.....	.....
District of Columbia	707	28	44	12,035	1,331	.....	55,550	.....	.....
Total	35,802,114	1,238,502	628,303½	108,298,060	10,248,108¾	95,251½	219,163,319	80,841,422	790,479,275

AGRICULTURE.

SILK—SUGAR—WOOD—DAIRIES—ORCHARDS—WINE—FAMILY GOODS, &c.

HORTICULTURE.

GARDENS—NURSERIES.

STATES AND TERRITORIES.	Silk Cocoons. *Pounds.*	Sugar Made. *Pounds.*	Wood Sold. *Cords.*	Dairy Products. *Value.*	Orchard Products. *Value.*	Wine Made. *Gallons.*	Family Goods. *Value.*	GARDENS. Market Produce. *Value.*	GARDENS. Nursery Produce. *Value.*	NURSERIES. Men Empl'd	NURSERIES. Capital Invested.
Maine	211	257,464	205,011	$1,496,902	$149,384	2,236	$804,397	$51,579	$460	689	$84,774
New-Hampshire	419⅞	1,162,368	116,266	1,638,543	239,979	94	538,303	18,085	35	21	1,460
Massachusetts	1,741	579,227	278,069	2,373,299	389,177	193	231,942	283,904	111,814	292	43,170
Rhode Island	458	50	48,666	223,229	32,098	803	51,180	67,741	12,604	207	240,274
Connecticut	17,538	51,764	159,062	1,376,534	296,232	2,666	226,162	61,936	18,114	202	126,346
Vermont	4,286	4,647,934	96,399	2,008,737	213,944	94	674,548	16,276	5,600	48	6,677
New-York	1,735¾	10,048,109	1,058,923	10,496,021	1,701,935	6,799	4,636,547	499,126	75,980	525	258,558
New-Jersey	1,966	56	340,602	1,328,032	464,006	9,416	201,625	249,613	26,167	1,233	125,116
Pennsylvania	7,262½	2,265,755	269,516	3,187,292	618,179	14,328	1,303,093	232,912	50,127	1,156	857,475
Delaware	1,458½	.....	67,864	113,828	28,211	322	62,116	4,035	1,120	9	1,100
Maryland	2,290½	36,266	178,181	457,466	105,740	7,585	176,050	133,197	10,591	619	48,841
Virginia	3,191	1,541,833	403,590	1,480,488	705,765	13,911	2,441,672	92,359	38,799	173	19,900
North-Carolina	3,014	7,163	40,034	674,349	386,006	28,752	1,413,242	28,475	48,581	20	4,663
South-Carolina	2,080	30,000	171,451	577,810	52,275	643	930,703	38,187	2,139	1,058	210,980
Georgia	2,992½	329,744	57,459	605,172	156,122	8,647	1,467,630	19,346	1,853	418	9,213
Alabama	1,592½	10,143	60,955	265,200	55,240	177	1,656,119	31,978	370	85	58,425
Mississippi	91	77	118,423	359,585	14,458	12	682,945	42,896	499	66	43,060
Louisiana	317	119,947,720	202,867	153,069	11,769	2,884	65,100	240,042	32,415	349	359,711
Tennessee	1,217	258,073	104,014	472,141	367,105	653	2,886,661	19,812	71,100	34	10,760
Kentucky	737	1,377,835	264,222	931,363	434,935	2,209	2,622,462	125,071	6,226	350	108,597
Ohio	4,317½	6,363,386	272,527	1,848,869	475,271	11,524	1,853,937	97,606	19,707	149	31,400
Indiana	379	3,727,795	183,712	742,269	110,055	10,265	1,289,802	61,212	17,231	309	73,628
Illinois	1,150	399,813	134,549	428,175	126,756	474	993,567	71,911	22,990	77	17,515
Missouri	70	274,853	81,981	100,432	90,878	22	1,149,544	37,181	6,205	97	37,075
Arkansas	95	1,542	78,606	59,205	10,680	.....	489,750	2,736	415	8	6,036
Michigan	266	1,329,784	54,498	301,052	16,075	.....	113,955	4,051	6,307	37	24,273
Florida	124¾	275,317	9,943	23,094	1,035	.....	20,205	11,758	10	60	6,500
Wisconsin	¼	135,288	22,910	35,677	37	.....	12,567	3,106	1,025	89	85,616
Iowa	.....	41,450	7,304	23,609	50	.....	25,966	2,170	4,200	10	1,698
District of Columbia	651	.....	1,287	5,566	3,507	25	1,500	52,895	850	163	42,933
Total	61,552½	155,100,809	5,088,891	33,787,008	7,256,904	124,734	29,023,380	2,601,196	593,534	8,553	2,945,774

POPULATION AND RESOURCES OF THE BRITISH EMPIRE.

An account of the population of the empire has been taken at intervals of ten years from 1801; and the following table will show the gradual increase which has occurred during these intervals:—

	1801.	1811.	1821.	1831.
England and Wales, .	8,872,980	10,163 876	11 978,875	13,894,569
Scotland, .	1,599,068	1,805,688	2,093,456	2,365,807
Ireland, ..	—	4,500,000	6,802,093	7,734.365
Army and Navy, ..	470,500	640,500	319.300	277,017
Totals.	10,942,548	17,109,864	21,193,724	24,271,758

The increase of population has been greatest in the manufacturing districts, where, in some instances, it has been double of those which are merely agricultural; as, for example, the increase in the manufacturing counties of England, from 1821 to 1831, was 22 per cent., while in the agricultural counties it was only 10½. It has been ascertained, that, in 1831, there were of the classes belonging to the aristocracy in Great Britain, from 3000 to 4000 families; of squires and gentlemen, who are land proprietors, stockholders, money-lenders, &c., from 50,000 to 60,000 families; of learned professions—36,000 clergy of all denominations, about 30,000 lawyers, and 50,000 physicians, surgeons, apothecaries—making 116,000 families, with half as many more dependants; of farming tenants, about 250,000 families, and of their laborers, 400,000 families; of merchants, shop-keepers, and general traders, 900,000 families; of artisans, 200,000 families; of manufacturers in all lines, 500,000 families; of laborers, porters, and servants, 600,000 families; and of destitute paupers, soldiers, &c. 800,000 families.

The statement of the aggregate population of the British islands, affords no idea of the force which is actually employed in agriculture and manufactures. The effective laborers (men) are estimated to amount to no more than 7,000,000, whereas, reckoning the powers exerted in productive industry by animals, mills, steam-engines, and mechanism of various kinds, the force is equal to the strength of more than *sixty millions* of working men.

An estimate was formed a few years ago of the total annual income of all classes of people of the United Kingdom, with the aggregate value of the articles of use and luxury which each produces, and from this we make the following extract:—

Value of agricultural and dairy produce,	£236,600,000
" Mines and minerals,	21,400,000
" Inland and foreign trade,	57,773,059
" Manufactures,	148,050,000
Total of produce and property annually created in Great Britain,	£503,823,059

An estimate was also formed of the value of the whole property, public and private, which has been created and accumulated by the people of this country, and which they now actually possess. This value, when the sum is expressed by figures, is so immense that it eludes the imagination to conceive it.

Value of productive private property,	£2,995,000,000
" unproductive, or dead stock,	580,700,000
" public property of all kinds,	103,800,000
Total public and private property,	£3,679,500,000

The wealth of the empire is distributed in the following proportions between the three countries:—

	Productive private property.	Unproductive priv't prop'ty.	Public property.
England,	£2,054,600,000	£374,300,000	£42,000,000
Scotland,	318,100,000	51,100,000	3,000,000
Ireland,	622.100.000	116,400,000	11,900,000

The proportion which these values bear to the population in each country is not suggested by the table; but in England (taking productive and unproductive property together) the ratio is £186 to each person; in Scotland, £160; and in Ireland, £96.

The following is the latest statement of the extent and population of the empire:—

	Population.	Sq. Miles.
British Islands,	24,271,758	99,948
British dependencies in Europe,	247,701	
North America, Canada, &c.,	1,066,208	1,930,000
West Indies,	884,050	
Australian Colonies,	39,685	1,496,000
Islands of Ceylon and Mauritius,	1,034,736	23,000
British possessions in Africa,	154,046	91,000
East Indian Empire,	89,577,206	826,650
Total,	117,375,390	4,457,598

Since the preceding details were collected, the returns of the census of Great Britain for 1841 have been published. It appears from these, that on the night of the 6th of June 1841, the population was as follows:—

England,	14,995,508
Wales,	911,321
Persons traveling on railways and canals,	4,896
	15,911,725
Scotland,	2,628,957
Man, Jersey, and other islands in British Seas,	124,079
Total of Great Britain,	18,664,761

If to this we add 8,205,382 for Ireland, which, however, we have only on newspaper authority, the total population of the United Kingdom, on the night of June 6, was 26,870,143. The returns included only such part of the army, navy, and merchant seamen, as were at the time of the census within the kingdom on shore.

The increase of the population, as compared with the returns of 1831, is at the rate of 14.5 per cent for England; 13 per cent for Wales; for Scotland, 11.1; for the Islands in the British Seas, 19.6: making the increase for the whole of Great Britain 14 per cent, being less than that of the ten years ending 1831, which was 15 per cent.

THE PERMANENCE OF THE ACTION OF LIME.

I know a plot of ground in this neighborhood, containing 166 acres, which formerly grew little except heath. A good dressing of lime was applied on the top sward, which has more than doubled its value. This was done about 15 years ago, and totally eradicated the heath. The lime to this day appears in full action, as its effects annually testify, from the richness and sweetness of the herbage, the texture of which has been thoroughly changed by the application of the lime. The deep green hue and luxuriant appearance of this land in spring and autumn form a striking contrast with those adjoining, which are still unimproved. The soil is a thin moorish loam in a high climate, resting on the greywacke formation.

[J. Watson, Eng. Ag. Soc. Jour.

THE POTATO MURRAIN.

In all our observation we have never known a period where two subjects engrossed so much of the public attention, and filled so large a space in the public papers, as do the *Potato Disease* and the rail-way mania, at this time, of the public mind and papers of England.

Although this disease may not prevail with us to an extent sufficient to justify the appropriation of much space, where space is so precious, it may be well to keep inquiry alive, as we propose by occasional extracts like the following, from a late London paper, the Agricultural Gazette.

To the Editor of the Cork Constitution:

Sir—I grieve to say that after having closely watched the state of the potato gardens between Bristol and London last Wednesday, I did not see *one single exception to a total failure*—the stalks all decayed and gone. Where it began early, they were as much withered as you would say an undug garden was in the month of January after a hard frost. Where the disease lately commenced, the edges of the leaves and the young side shoots were quite black; and I understand after this appearance takes place, black streaks are seen running *down the stalk*, from which it is believed the poison is conveyed to the tuber. Having witnessed such complete and total failure through a distance of 120 miles, I can readily believe what I have been told, after an anxious inquiry, that the crop is entirely lost in the south of England; and from my son, who arrived here yesterday from Cambridge, I learn that even north of that county the loss is terrific. I have endeavored to learn from scientific men what has been the cause, and should the calamity reach Ireland, what ought to be done. In the University of Cambridge the subject has been well considered, and after the most strict examination, it cannot be discovered whether it has been caused by animalculæ or fungus; but unfortunately, whatever is the cause, the potato, when the disease has made any head, is poisonous: and this has been proved by pigs which were before healthy, having died in a few hours after being fed on them; and I regret to say that I was this day informed by a gentleman in the city, a man in business, and of the highest respectability, that two Irishmen had died from eating this pernicious food. I trust it is not the case, but, from the quarter I heard it, fear there must be some foundation for the report.

I had a good deal of conversation last evening with a very scientific medical gentleman here, and he told me the only way (as far as he had heard, and believed himself) that the poisonous substance in the diseased potato could be accounted for was, that the plant belonged to the Salarium tribe, and as all the berries or fruit of the light shade contained poison to a great degree, that by some unaccountable change the poison was conveyed back to the tuber through those black streaks seen running down the stalk, for in all instances they are observed to begin above, and regularly descend to the root. This having been proved to be the fact, my chief object in addressing you *is to point out the only way considered now to be effectual to stay the plague, which is, the day a field shows the slightest symptom of disease, to mow down the stalks with a scythe quite close.* To potatoes planted early, I am convinced it can be of no injury, as having now ceased to grow, the tubers will ripen in the ground quite as well as if the stalks remained. I should have mentioned that the first part of the potatoes that shows disease is just inside the skin, but that it soon runs through the entire in brown and black stripes. So much has been published within the last week, of the farina not being injured, I need not take up your time on the subject; but my own opinion is, that as far as the disease has penetrated, the farina is gone as well as the other parts.

I have the honor to be, Sir, your obedient serv't,
J. DILLON CROKER.

London, September 13th, 1845.

From the Bristol Mercury, Sept. 20.

The following correspondence has just taken place between Lord Portman, President of the Royal Agricultural Society, and William Herapath, Esq., the eminent analytical chemist of this city, in reference to seed potatoes for 1846. His lordship in a subsequent letter requests that the correspondence may be made public, and it has been handed to us by Mr. Herapath for that purpose. The subject is of vital importance, and is worthy of the deepest attention:

"Bryanston, Sept. 13, 1845.

"Sir—I observe in the newspapers that you have directed your attention to the potato disease, and have advised as to the use of the starch, &c. As I am specially bound, during this year of my holding the office of President of the Royal Agricultural Society of England, to promote inquiry and to notify observations on subjects relative to the produce of the soil, I trouble you with this letter, and ask if any method has occurred to you by which the potato may be preserved for the planting of 1846? I have found that potatoes apparently sound and free from the disease, though in a field or garden which has been partially diseased, have, after being stored away, shown signs of the disease and have rotted off; and I fear that the greatest quantity of the potatoes will thus perish, and so continue the distress of the poor into another season. I have directed some potatoes to be stored in slaked lime, in the hope that it may preserve them, but have, of course, yet had no time to judge of the effect. I therefore ask for your opinion, as one of our most eminent chemists, upon this point, and would ask leave to

make known your reply, if you are able to offer an opinion sufficiently explicit to be useful.

"I remain your obedient servant,

"WM. HERAPATH, Esq." "PORTMAN.

"*To Lord Portman, President of the Agr. Society.*

"BRISTOL, Sept. 17, 1845.

"MY LORD:—In reply to your letter of the 13th inst., I must say that I do not think it would be either safe or prudent to depend upon the infected potatoes of the present season as seed for the next year; as, in all instances, I have found the diseased parts to extend when the potatoes are kept in a damp situation; I should therefore expect that if any diseased seed was kept so dry as not to rot before setting time, yet upon being planted and left in the damp soil, the rotting process would then begin, and the hopes of the husbandman be disappointed. I have no doubt that some potatoes, apparently sound, have (as stated by your lordship) been found to be affected after stowing away; but I do not consider this to have been an origination of it, but merely that which was unnoticed when dug has become apparent after storing. When a potato is first affected, the diseased parts are scarcely visible; but upon keeping it in a dry place, the spots soon become dark, and consequently more apparent, but the spots do not extend; if, however, the tuber has been kept in a damp place, the spots not only extend rapidly over the surface, but penetrate into the interior, and in a short time it will be completely rotten. As far as the slaked lime, which you have used in your potato stores, has a tendency to prevent the tubers from touching each other, or, by its power of absorbing water, of keeping them dry, it will answer a good end: but it must not be expected to have any chemical effect upon the diseased parts or their juices. Anything which, like dry saw-dust or sand, would prevent contact, would prevent the propagation from one tuber to another; and any substance capable of absorbing the moisture of the air in which the potato is stored, would prevent the extension of the disease in each diseased root. Our best microscopists and cryptogamists are divided in opinion as to whether the cause of the calamity is a fungus or not. After all the examination I have given to the subject, and a careful review of all the evidence brought before me on the two sides, I believe that it is; and I am daily confirmed in the opinion originally expressed, that the only advantageous way of treating the diseased potatoes is to obtain from them, by rasping and washing, the starch which they contain—by which process all their nutriment can be retained; and if it is well dried it will keep for any length of time. The operations can be performed in the cottage or manufactory alike, as no apparatus beyond a tin rasp (a nutmeg grater,) a tub, and clean water are required; and I have ascertained that however far the disease might have extended, even if the root is rotten, yet the starch can be separated, and in a state fit to be eaten, if it shall be well washed, as all the bad parts come away with the water, while the great weight of the starch carries it to the bottom of the vessel. If it is required that the fecula should have all the qualities of the best foreign arrow-root, it is only necessary to wash it last in water containing a little chlorine, when it has unrivaled color and quality, and this I can speak of practically, having made many tons of the article. I will only add, that an opinion has been circulated that the disease is owing to the introduction of guano as a manure; this I feel no hesitation in contradicting, as I have seen it in situations where no guano has been used, and where every other variety of manure has been resorted to.

"I am your lordship's most obedient servant.

"WILLIAM HERAPATH."

The Governor of the Province of North Holland and the agricultural committee of Groningen have just published official reports respecting the murrain amongst the potatoes. In the circular of the above functionary, it is stated that potatoes when they begin to be inflamed and are only slightly infected, should be carefully spread out, and dried in a dark place; this (it is said) will harden the germ of the disease, and arrest its progress. It is recommended not to throw away the potatoes which are more deeply injured, but to extract the nutritious portions from them. The inhabitants of North Holland are also recommended by the governor to try to raise winter potatoes in gardens and on sandy soils, to plant them a foot deep in September or October, and to cover the ground with straw or leaves as soon as the frosty weather sets in. The official report of the Groningen Agricultural Committee is a much more lengthy and important one, and enters at once into the causes and character of the disease, and proposes some remedies. The malady is partly ascribed in the report, to the heavy rains of the summer of 1844, and to the wet weather which prevailed just at the time the tubercle seeds were formed, and partly to the carelessness of the agriculturists in keeping the potatoes intended for planting perfectly dry. It is thought too that the excessive cold of last March proved very injurious. The more direct causes are thus enumerated:—1. The too rapid growth of the plants this year. 2. The excessive heat which prevailed in the first part of the summer of the present year, being, on the 13th of June, 87 deg. of Fahrenheit; on the 3d of July, 87½ deg.; and on the 7th of the same month 91¼ deg. On these days several persons fell dead in the fields. 3; The rain which fell at intervals, and which subjected the plants, as it were, to the action of warm water. 4. The cold and moist temperature which succeeded, from the 15th of July to the end of August: and, 5, the existence in several places, on July 21 and 22, of an extraordinary fog, which emitted a disagreeable odor. The agricultural committee attach much importance to this miasma; for they hasten to state that the malady almost immediately afterwards was manifested, and they add that they are not by any means disposed to place this fog amongst the improbable causes *(onw aarschijnlijkheden)* of the complaint in question. In the province of Groningen it was clearly ascertained that the infection proceeded from the leaves and the stalk to the root, and that it was displayed by small stains and by the existence of a species of mushroom placed by some writers under the head, *plusiporum solani*. No traces of these parasites were discovered in the stalks or the tubercles—a fact which is set forth as a proof that the disease was first propagated from the leaves, and consequently that it differs essentially from those murrains which originate in the roots. "We maintain," observe the committee, "that this disease has probably existed before, more or less, but that it is one which hitherto has not been described by naturalists *(maar eene bijde nat unrkundigen nog onbeschrevene ziekle)*.

To prevent the return of the disease the following remedies are suggested:—Leave the potatoes in the ground until the weather becomes very dry, and then spread them out in the field. Be very careful not to plant potatoes infected with the disease. Keep those intended for sowing very dry, and give the preference to potatoes produced on sandy soils. Burn at once the rotten potatoes. Avoid as much as possible planting potatoes in places where they grew this year, and which ought, moreover, to be well covered with lime as soon as the crop is removed.

P. S. We have recently learned from a gentleman residing near South Amboy, and whose crop of potatoes was remarkably fine in size and appearance, that they are already rotting in his cellar; and such is said to be the case with potatoes shipped from the State of Maine to southern ports.

"It's an ill wind that blows nobody any good," but it would be a curious fact if the failure of the potato crop in Ireland, on which from three to four-fifths of the population subsist, should save us from the dire and unforeseen calamities of *war*. It may be that the dread of famine may tame the arrogance, or soothe the justly offended pride of Great Britain, and induce her to surrender quietly what does not belong to her; or, contrary to her practice and character, to submit to be wronged and plundered, *as the case may be.*

IMPORTANT AND EXTENSIVE SALES OF SHORT-HORNS.—At Mr. Henry Watson's sale, at Walkeringham, 18 cows, heifers, and bulls, out of his lots, sold for £1815 8s., and Barmpton Rore, lot 4, sold with her family, *ten* in all including *herself*, for £103 11s., or averaging £103 3s. 1d. ($500) each; Barmpton Rore was purchased by Mr. Watson from Mr. Wetherell, she having Princess Royal at her foot, and being in calf at the same time with Butter-cup. The herd of Mr. Watson were principally descended from the following first-class bulls, viz., Comet, 155; Cossack, 1880; Raree Show, 4874; Belshazzar, 1703; Rathriagh, 6366; Bellerophon; 3119; and Lord Adolphus Fairfax, 4249. The neighbors of Mr. Watson, feeling gratified with the renown brought upon their village by the successful exertions of that gent. as a breeder of stock, which was proved by the commanding prices they obtained, honored him, at the close of the sale, with a merry peal on the church bells. [English Paper.

CONSUMPTION OF SUGAR IN EUROPE AND NORTH-AMERICA.

WE feel ourselves not only justified, but called upon, to give place to the following, for the attraction it may have for our numerous and liberal patrons in Louisiana.

We may felicitate ourselves in having offered them, in Judge Rost's Address, an article so acceptable and well adapted to their interests and industry, that it has been transferred to the New-Orleans Bulletin, and met with a most favorable reception.

From the London Economist.

The following interesting calculation of the entire consumption of Sugar in Europe, the U. States, and the British Colonies, has been made by Mr. Frederick Scheer, after extensive and careful inquiries, for which his extensive connections with the Sugar trade throughout Europe afford him peculiar facilities:

CONSUMPTION OF SUGAR.

Having attempted to ascertain the actual consumption, as well as the entire production, of the important article of Sugar, I now submit to my friends the result of my inquiries. Extreme accuracy can, of course, hardly be expected, but I have no reason to apprehend that I have committed any material error. For corrections, accompanied by official returns or authentic proofs, I shall feel greatly obliged.

It will be seen that the average consumption of the 278 millions of civilized people, which my inquiry embraces, is about 6 2-5 pounds per head per annum, or at the rate prevailing in the custom house union.

The following table is curious, and may lead to some useful conclusions:

					Tons.
If the general consumption of Sugar were equal to that prevailing in Russia,	or 1 6-10 lbs.	per head,	it would	amount to	198,000
Austria,	or 2 6-10 "	"	"	"	324,600
France,	or 8 2-10 "	"	"	"	1,017,000
Holland, Belgium, &c.	or 12 1-10 "	"	"	"	1,501,000
United States,	or 18 "	"	"	"	2,233,000
Great Britain,	or 19 "	"	"	"	2,357,000
If the consumption were equal to what is allowed to paupers in English workhouses, according to McCulloch, 34 lbs. per annum, it would amount to.....					4,219,000
—To what is allowed to sailors in the British Navy, 2 oz. per day, would amount to.....					5,662,000
—To what is probably used among the middling classes in England, viz. 1 lb. per individual in the week, would amount to.....					6 453,000

There can be no doubt that, with a general reduction of duties, the use of this article might be enormously increased; and since it is certain that the greater the demand, the cheaper will commodities be supplied, such increase would open an unbounded field for enterprise, com-

merce, and colonization. It is to be hoped that Governments will take this into consideration, and relieve the article from the heavy burthens and restrictions under which it now labors almost in every country. Thus, sources for industry and enjoyment might be opened to the enormous mass of people enumerated by me, to an extent exceeding almost the flights of the most sanguine imagination.

ESTIMATED CONSUMPTION OF SUGAR IN 1845.

Countries.	*Population according to best authorities.*		*Quantity of Sugar.*		*Quantity per head.* lbs. 10ths
Custom-House Union		29,006,000	Colonial 70,000; Beet-root 10,500	80,500	6 2
Belgium	4,214,000				
Holland	3,160,000				
Oldenburg	276,000				
Hamburg	166,000				
Bremen	72,000				
Lubec	47,000				
Hanover	1,808,000				
Mecklenberg	606,000				
		10,349,000	Colonial 51,000; Beet 5,000	56,000	12 1
Russia		56,778,000	Colonial 37,000; Beet 7,000	44,000	1 6
Austria	38,797,000				
Naples and Sicily	8,320,000				
Sardinia	4,882,000				
Tuscany	1,565,000				
Rome	2,977,000				
Parma	495,000				
Lucca	170,000				
San Marino	76,000				
Modena	378,000				
		57,060,000	Colonial 62,400; Beet 6,000	68,400	2 6
France		35,400,000	French colonies 89,000; Foreign 11,000; Beet root 28,000	128,000	8 2
Portugal		3,412,000		10,000	6 6
Spain		13,786,000	(from Cuba, 1844, 36,100)	36,000	5 8
Sweden	3,111,000				
Denmark	2,248,000				
Norway	1,150,000				
		6,509,000		12,000	4 1
Great Britain and Ireland		28,323,000		240,000	19 0
Ionian Islands	205,000				
Malta and Gibraltar	130,000				
		335,000			
Cracow		145,000	*		
Switzerland		2,316,000			
Turkey	10,000,000				
Greece	770,000				
		10,770,000		4,000	
Canada and other colonies		4,544,000	These and shipping stores, est'd	15,000	
United States		18,700,000		150,000	18 0
Number of people		278,033,000		845,900 tons.	

* Consumption not to be ascertained, but mostly included in the quantities assumed to be used elsewhere.

WEEDS ON GRAVEL WALKS.—A subscriber says: "Seeing in your columns receipts for eradicating weeds on gravel-walks, and thinking 'prevention better than cure,' I beg to mention a plan which I have always found to answer. It is simply, when forming your gravel-walks, and before laying on the gravel, to spread a layer of the dark-colored soap waste, which may be got from any soapery, if in the neighborhood, and then putting the gravel on it and rolling both of them, after spreading, as as firmly as possible. This will not only prevent weeds from growing, but will form a walk as hard and solid as cement. [English Paper.

☞ In consequence of the unwholesome state of the potatoes, the guardians of the Totnes Union have ordered the substitution of bread and rice in the workhouse for the present, at the rate of six ounces of bread, or four ounces of rice (uncooked,) for one pound of potatoes. [English Paper.

☞ A sow, belonging to Mr. John Birchley, of the Red Lion Inn, near Chorley, has produced 63 pigs in four farrows. The mother of this prolific animal had 113 pigs in seven farrows. [English Paper.

WAGES AND CONDITION OF WOMEN AND CHILDREN, EMPLOYED IN AGRICULTURAL LABOR, IN ENGLAND.

EFFECT OF THAT CONDITION AND DESCRIPTION OF LABOR ON THEIR HEALTH AND MORALS.

If any man desires to have a view of materials that will enable him to form a judgment on the matters which we have grouped as a heading for this paper, let him get and read the "Reports of Special Assistant Poor Law Commissioners on the Employment of Women and Children in Agriculture, presented to both Houses of Parliament, by command of Her Majesty," and printed in London in 1843.

In presenting the extracts, made pretty much at random, we do not see that they call for any particular comment from us. Every reader will make his own reflections, and on certain points all must arrive at the same conclusion—to wit: that Agricultural labor in the field, is in general more favorable to the morals, and more conducive to the health of women and children than labor in-doors—either domestic or manufacturing; and that the condition of women, *white women* and children, generally, in England, on the score of number of hours daily, and severity of labor is not better; and in respect of clothing, personal cleanliness, diet and shelter, and morals, is infinitely worse than that of the slaves of this country. On this point the book before us is so minute, particular, authentic and official; prepared with care, and based on the testimony of enlightened and disinterested witnesses, and presenting these points in every aspect in which it is possible to view them, that no shadow of ground is left for doubt or caviling. The testimony was taken under oath, and under instructions, which informed the Commissioners that the subject of their inquiry was the *Employment of Women and Children in Agriculture.* They were requested to examine into the sorts of labor at which they are respectively employed, the wages which they receive, the hours of work, and any other similar facts which "may tend to throw light on their physical and moral condition." The Commissioners desired the Assistant Commissioners, who consisted of four barristers-at-law, to direct their main attention to the employment of children, and that they would particularly inquire into the age at which they begin to work, and to the effects which their occupation in labor may produce upon their bodily health as well as upon their opportunities for obtaining school instruction and moral and religious education.

As we have before stated, the few extracts for which we can find room, will be taken much at random, but in a way to throw light on the several points of inquiry. The whole volume of nearly four hundred pages goes to show that the condition of the English laborer and his family is most deplorable. No man of humanity but must be shocked at the view of it; and the perusal of this testimony, not from the laboring men and women only, but from physicians and clergymen confirms us in the impression we have long entertained, that the agreeable emotions which must attend the traveler on a view of a country presenting such a magnificent landscape of palaces and perfect culture, and the admiration which must be begotten by the grandeur of their lordly domains, must be painfully counteracted by the evidence of extreme suffering and degradation which every where shocks his sensibilities. A gentleman lately returned from England, who had enjoyed the easy and elegant hospitality of English Noblemen of the highest character, observed, that while no country life on the Globe could compare with it in respect of the perfection of all the domestic appointments for social enjoyment among men of rank and opulence; it was yet absolutely painful to him, in going over their estates to witness the signs of abject cap-in-hand servility which characterized their laborers, and even of the employés and agents of some authority over them.

Heaven bear us witness, we have no pleasure in making such exposures of the wretchedness of our fellow creatures, but knowing as we do, from long personal observation, the unaffected kindness of those in the South, who are born inheritors of slaves, we deem it fair to afford them the encouragement and consolation to know that when those whom Providence has placed in their possession, are not treated with cruelty which deservedly disgraces the perpetrator, their situation is a paradise compared with the half-starved populace of foreign countries called free. We say where they are not treated with cruelty, for *that* we would denounce, and have punished by the laws, when power is so abused even towards dumb beasts.

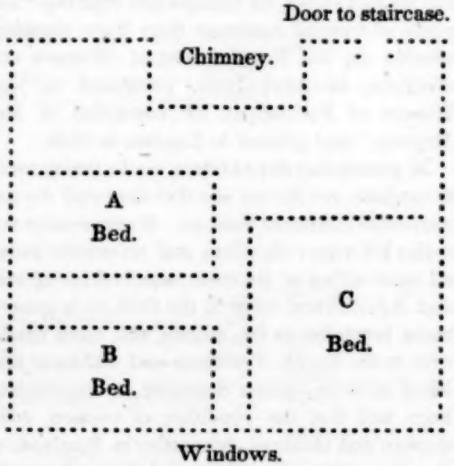
The extracts which follow make part of the Report of one of the Commissioners, Mr. Austin, on the Counties of Wilts, *Dorset*, Devon and *Somerset*, on the point of inquiry relating to

lodging, and contain also the evidence of three women as consecutively arranged in the book.

To understand these accounts it is necessary to bear in mind that these families *find themselves out of the wages mentioned*; and that for calculation, it is near enough to reckon a pound at five dollars, a shilling at twenty-five cents, and a penny at two cents. As to lodging and food it would be curious to run the comparison between that which the white laborers of England obtain, as here stated, in "*Dorset and Somerset*," and that which is the lot of slaves in "*Dorset and Somerset*," *Maryland*. Here every black family has a good tight house, made of logs, filled in with billets of wood and clay, a dry clay floor, which they prefer to one of plank, and a shingle roof; abundance of wood, with, generally their own garden, as much as they choose to work; and their hog, besides their regular allowance of meat, generally three, sometimes four pounds each, and their poultry to raise for sale; with their "patch" of unlimited size for sweet potatoes and cabbages. Besides these they have the offal of the garden, the dairy, and the orchard for the children, with some old woman to take care of them; a physician quickly in attendance in case of sickness, and the good house-wife to see that they get tea and sugar, and soup, and other suitable diet in all cases of need.

There is not a man who has had an opportunity of observation that does not know this to be a true picture. We give it as a mere *presentment of facts* for the information of a natural curiosity as to the comparative condition of laboring classes in different countries. Facts which, like every other sort of knowledge, men of any *ism* may well desire to possess.

"With regard to lodging, there is no difference between that of the women who labor in the fields and the women of the same class who do not. The want of sufficient accommodation seems universal. Cottages generally have only two bedrooms (with very rare exceptions); a great many have only one. The consequence is, that it is very often extremely difficult, if not impossible, to divide a family so that grown-up persons of different sexes, brothers and sisters, fathers and daughters, do not sleep in the same room. Three or four persons not unfrequently sleep in the same bed. In a few instances I found that two families, neighbors, arranged so that the females of both families slept together in one cottage and the males in the other; but such an arrangement is very rare, and in the generality of cottages I believe that the only attempt that is or that can be made to separate beds, with occupants of different sexes, and necessarily placed close together from the smallness of the rooms, is an old shawl or some article of dress suspended as a curtain between them. At Stourpain, a village near Blandford, I measured a bed-room in a cottage consisting of two rooms, the bed-room in question up stairs, and a room on the ground-floor in which the family lived during the day. There were eleven in the family: and the aggregate earnings in money were 16s. 6d. weekly (Dec. 1842), with certain advantages, the principal being the father's title to a grist of a bushel of corn a week, at 1s. below the market price, his fuel carted for him, &c.—They had also an allotment of a quarter of an acre, for which they paid a rent of 7s. 7d. a year. The following diagram shows the shape of the room and the position of the three beds, A, B, C, it contained. The room was ten feet square, not reckoning the two small recesses by the sides of the chimney, about 18 inches deep.—The roof was the thatch, the middle of the chamber being about seven feet high. Opposite the fire-place was a small window, about 15 inches square, the only one to the room.



Bed A was occupied by the father and mother, a little boy, Jeremiah, aged 1½ years, and an infant aged 4 months.

Bed B was occupied by three daughters,—the two eldest, Sarah and Elizabeth, twins, aged 20; and Mary, aged 7.

Bed C was occupied by the four sons,—Silas, aged 17; John, aged 15; James, aged 14; and Elias, aged 10.

There was no curtain, or any kind of separation between the beds.

This I was told was not an extraordinary case; but that, more or less every bed-room in the village was crowded with inmates of both sexes, of various ages, and that such a state of things was caused by the want of cottages.

It is impossible not to be struck, in visiting the dwellings of the agricultural laborers, with the general want of new cottages, notwithstanding the universal increase of population. Everywhere the cottages are old, and frequently in a state of decay, and are, consequently, ill adapted for their increased number of inmates of late years. The floor of the room in which the family live during the day is always of stone in these counties, and wet or damp through the winter months, being frequently lower than the soil outside. The situation of the cottage is often extremely bad, no attention having been paid at the time of its building to facilities for draining. Cottages are frequently erected on a dead level, so that water cannot escape; and sometimes on spots lower than the surrounding ground. In the village of Stourpain, in Dorsetshire, there is a row of several laborers' cottages, mostly joining each other, and fronting the street, in the middle of which is an open

gutter. There are two or three narrow passages leading from the street, between the houses, to the back of them. Behind the cottages the ground rises rather abruptly; and about three yards up the elevation are placed the pig-sties and privies of the cottages. There are also shallow excavations, the receptacles apparently of all the dirt of the families. The matter constantly escaping from the pig-sties, privies, &c. is allowed to find its way through the passages between the cottages into the gutter in the street, so that the cottages are nearly surrounded by streams of filth. It was in these cottages that a malignant typhus broke out about two years ago, which afterwards spread through the village. The bed-room I have above described is in one of them.

This is, perhaps, an extreme case; but I hardly visited a cottage where there were any attempts at draining. The dirt of the family is thrown down before or behind the cottage; if there is any natural inclination in the ground from the cottage, it escapes; if not, it remains till evaporated. Most cottages have pig-sties joining them; and these add to the external uncleanliness of the laborers' dwelling.

With reference to the subject of lodging, Mr. Phelps, an agent of the Marquis of Lansdowne, says:

"I was engaged in taking the late census in Bremhill parish, and in one case in Studley I found twenty-nine people living under one roof; among them were married men and women, and young people of nearly all ages. In Studley it is not at all uncommon for a whole family to sleep in the same room. The number of bastards in that place is very great; the number of unmarried women is greater than that in the neighboring places. I do n't think this state of things is attributable to the women working in the fields, but more to the want of proper accommodation in the cottages."

Hon. and Rev. S. Godolphin Osborne, rector of Bryanston, near Blandford, in Dorsetshire, says:

"To say nothing of the physical injury done to himself (the laborer) and family from the want, in most instances, of anything like proper drainage without his dwelling, and the foul air which they are compelled to breathe from the too confined space of the dwelling within, from infancy to puberty his children for the most part sleep in the same room with his wife and himself; and whatever attempts at decency may be made, (and I have seen many most ingenious and praiseworthy attempts,) still there is the fact of the old and young, married and unmarried, of both sexes, all herded together in one and the same sleeping apartment. Within this last year I saw, in a room about 13 feet square, three beds: on the first lay the mother, a widow, dying of consumption; on the second two unmarried daughters, one 18 years of age, the other 12; on the third a young married couple, whom I myself had married two days before. A married woman of thorough good character told me, a few weeks ago, that on her confinement, so crowded with children is her one room, they are obliged to put her on the floor in the middle of the room, that they may pay her the requisite attention: she spoke of this as to her the most painful part of that her hour of trial. I do not choose to put on paper the disgusting scenes that I have known to occur from this promiscuous crowding of the sexes together. Seeing, however, to what the mind of the young female is exposed from her very childhood, I have long ceased to wonder at the otherwise seeming precocious licentiousness of conversation which may be heard in every field where many of the young are at work together. Early robbed by circumstances of much of that purity which is her honor's safest guard, field-work lends a finish to the mischief."

Mr. Spooner, of Blandford, surgeon, says:

"Generally the cottages are too small for the families living in them, and tend to produce and aggravate disease, from the inmates living so closely together. Two years ago typhus fever occurred in a neighboring parish, which I attend; there was one cottage I attended which consisted of one room on the ground-floor, and two small bed-rooms up stairs. In this cottage lived an old man, with his wife, his two daughters, middle-aged women, and his son and wife, with three children—in all, ten individuals.—The whole family had the fever, some of them very severely. The son's wife, with two of her children, were on a bed in an out-house; in the out-house was a well, and a large tub containing pigs' victuals, and was the general receptacle for everything. The floor was earthen, with no ceiling but the thatch of the roof. In the same village there were more than forty cases of typhus, and the spread of the disease must be attributed to the people living so densely packed together."

The clothing of women employed in field-labor would appear to be inadequate for their work, but the deficiency is not complained of by them. A change of clothes seems to be out of the question, although necessary not only for cleanliness, but for convenience and saving of time. The upper parts of the under-clothes of women at work, even their stays, quickly become wet through with perspiration, whilst the lower parts cannot escape getting equally wet in nearly every kind of work they are engaged in, except in the driest weather. It not unfrequently happens that a woman, on returning home from work, is obliged to go to bed for an hour or two to allow her clothes to be dried. It is also by no means uncommon for her, if she does not do this, to put them on again the next morning nearly as wet as when she took them off. It does not appear that any ill consequences to the health have been observed by medical men to arise from this cause, unless rheumatism be partly attributable to it. The want of a change of working-clothes, however, does not prevent the generality of working women having a better gown and other articles of dress for Sundays or holidays.

With reference to the question of clothing and linen for the family generally, a great change has been effected for the benefit of the laboring classes within these few years by the clothing clubs, which are excellently contrived for aiding the poor, and at the same time making such assistance depend upon their own exertions and good conduct, and for avoiding all the mischiefs of indiscriminate charity. I had an opportunity of examining the clothing club at Blandford, in Dorsetshire, and its arrangements and working appeared equally excellent. Any laboring family of good conduct was allowed to belong to it, subscribing 1d. 2d. or 3d. a week, according to its size and other circumstances. At the end of the year, Christmas, these subscriptions are doubled by the donations of persons in a better position of life, living in the neighborhood. The subscribers are then entitled to purchase of the tradesman appointed to supply the club, to the amount of their respective shares of the funds, any plain articles of dress or of household linen. The tradesman of the club, in consideration of the large sum of money thus laid out, and promptly paid at his shop, which in the Blandford club exceeded £2,000 last Christmas, supplies the best articles of the description wanted at a price rather lower than he could afford to sell them to the laborer dealing with him in the ordinary way. It is also an imperative rule of

the club, that, if any subscriber purchases with club-money any article of dress or linen not of a plain and useful description, he ceases to be a member, as he also does upon any ill conduct. The effect of these clubs has been very great in increasing the linen and clothes of the laborers' families since their establishment.

The general conclusion as to the physical condition of women engaged in Agriculture is, that it is better generally than those of the same class not so employed. The reason is evident: the means of the family are increased by her earnings; she has more food, if she be not better clothed and lodged. Her health is also better. I am now speaking of her own physical condition; the effects of her working at farm-labor upon her domestic economy, her husband and children, will be considered presently."

Mrs. Bustle, wife of Charles Bustle, farm-laborer, Whitchurch, Dorset, examined.

My husband is carter to Mr. Fowler. He has 7s. a week wages. We have also our cottage, with a garden, and ten lugs* of potato-ground, rent free; also a bushel of grist corn, if we like as much, a week—that is, tailings at 5s. per bushel. Every week or ten days my husband goes a journey with the wagon—he has then 1s. for his dinner, and another shilling which he may spend at the public house where he puts up; which he always does, however. If he carries his victuals with him, he has still 2s. every journey. He is out a day and night generally on a journey. Mr. Fowler also gives us furze for firing, and my husband has £1 at harvest, because he can't do tut-work like the others—he is wanted for something else. I have five girls and a boy. The three eldest girls, 8, 10, and 12, do buttoning, but I don't think they earn 2s. a week between them; they spoil a good deal of cotton, and dirty more; and they don't get all money for their buttons—it would be better if they did. The boy is too young to work.

The bread we make at home is better than baker's bread; I make six loaves out of a bushel of corn: we have not quite so much as that every week; but what we have, with a bag of potatoes, (240 lbs.) is quite as much as we consume at home. Four baker's loaves, with the potatoes, are not enough.—Baker's bread does not satisfy the children; it is licked away in no time, and they are hungry all day long with it. We never know the taste of butcher's meat, except when a piece is given to us.

Susan Vacher, widow, Milton Abbas, Dorset.

Women are employed in the hay-harvest, and at other times of the year in couching, weeding, and keeping the land clean. Generally the regular hours are from eight to five, but at hay-time and harvest longer; it depends on circumstances. In harvest I have earned 1s. a day, and have had two quarts. For hay-making I have had 8d. a day, but it depends on the weather. At other times, for couching, &c. 7d. a day. For drawing reeds I have had 7d. a day.—Wages for women have always been pretty much the same.

I am now in my fifty-seventh year, and have worked two-and-twenty years in the fields; I am always better when out at work, and prefer it to living at home. I have nine children. I have two grown-up sons—one 39, the other 27. They went out to work when they were boys—one at 7 years old, the other at 9. They were always quite healthy and strong. As for young women, I think it better for them to go into the fields; they are quite as well there as at buttoning, as far as their morals are concerned. Boys don't want to bide at home when they have once been out. My eldest son now [Dec.] gets 7s. a week and a grist; he also gets his cottage for 21s. a year, and has a garden and ten lugs of potato-ground free. He is not married. He keeps a pig. *Most laborers manage to keep some of the pig when they kill it—nearly always half of it.* I know where the whole is kept. The farm-laborers generally manage to have a little bacon by them, and they don't always go without cheese. The cottages at Milton Abbas are not nearly so full as I have known them.

Rachel Hayward, wife of John Hayward, farm-laborer, Stourpain, Dorset.

There are eleven of us in our family—myself, my husband, three daughters, and six sons. We have two rooms—one down stairs, and the other up stairs over it. We all sleep in the bed-room.

My husband gets 8s. or 7s. with a grist, a bushel, a week; my two eldest daughters get about 3s. 6d. a week at buttoning, and three of my boys get 5s. a week together—in all about 16s. 6d. a week. We have 16½ lugs of potato-ground, on which we grow potatoes and a few vegetables; for that we pay 7s. 7d. a year rent. We pay 1s. a week for the cottage, and coal and wood cost us 1s. 8d. a week at this time of the year, [Dec.] We get ¾ cwt. of coal a week. I buy, besides, every week, ¾ lb. soap, 1 oz. tea, ½ lb. bacon. I reckon we eat a pound of bread each day; that, with potatoes, gives us enough. My three boys that are out at work went out at 9 years old.

* *Lug*, in Ireland, and in some parts of England and Scotland, is a synonym for *ear*. This is probably the root of the term as applied to land, meaning a perch or pole. Thus we have, in Spencer, a reference made to "eight lugs of ground."

[*Ed. Farm. Lib.*

GAS-WATER AS A MANURE.

To the Editor of the Mark-Lane Express:

An "Old Subscriber," if he wishes to employ the refuse of gas-works for manure, must proceed in his early practicings with extreme caution. The *gas-water*, or ammoniacal liquor, is undoubtedly an excellent manure, but it requires much diluting to fit it for a liquid manure. If it be applied as received from the gas-works to grass, it will apparently burn up and destroy the plant, but the next year the spot will be distinguished by very much increased fertility; the *refuse lime* through which the coal-gas has been passed in the process of purifying it from the sulphureted hydrogen becomes impregnated with the sulphureted hydrogen, and is partly converted into hydro-sulphuret of lime; a portion of ammonia is at first also in combination with it, but the carbonic acid gas of the lime combining with the ammonia, converts it into carbonate of ammonia or the volatile alkali; and in a very short time, from exposure, no ammonia will be found remaining in the refuse lime. Refuse lime may be applied either direct to the land or in compost, and in addition to its property as a manure, it is considered very offensive and destructive to many insects and grubs. *Gas-tar* contains the elements necessary for constituting a good manure, but has hitherto been but little used as a fertilizer. Mr. Bowley directs the compost heap to be formed with long dung about three feet deep, and coal-tar to be poured regularly over it, upon which another layer of dung or turf is to be put, and over all, on the top, is to be spread the lime; the whole is to remain in this state for two or three months before it is turned.

If the lime be placed under the tar, the tar will find its way through the dung to the lime, and, uniting with it, will form a hard cement, which will be broken with difficulty, and which he supposes will be but of little service to the land. I am, Mr. Editor, yours, &c.

AN OLD FRIEND.

THE COTTON PLANT....ITS HISTORY AND USES.

(Concluded from page 223.)

In 1840, at their instance, eight specimens of the soils of Edisto Island were analyzed by Professor Shepard.* The report of the Committee to whom was referred the valuable communication of that skillful chemist, is replete with highly useful matter, especially in relation to manures.† Full information on the other subject may shortly be expected from a very intelligent quarter. At the Agricultural Convention held at Monticello, Fairfield, on the 5th of July last, it was resolved "to request the Agricultural Societies of the State to unite in a contribution to procure a perfect analysis of the long and short staple Cotton stalk, seed, and lint, in the perfect state, and also when affected by disease." When this is done, a great object will have been attained. The planter, aided by the knowledge on other points equally important to be acquired, will no longer tread the path of doubt and uncertainty. The materials for restoring the constitution of the soil, and imparting health and vigor to the Cotton plant, have long been in his possession, but for the first time he will then know how to use them, and where necessary, how, and in what proportions, to unite them.

The Sea-Island Cotton fibre was analyzed in England, in 1825, by one well qualified for the task. 100 parts of the ashes, says Dr. Ure, yielded as follows:

1. Matter soluble in water, sixty-four parts, consisting of	
Carbonate of potash	44.8
Muriate of potash	9.9
Sulphate of potash	9.3
2. Matter insoluble in water,	
Phosphate of lime	9.0
Carbonate of lime	10.6
Phosphate of magnesia	8.4
Peroxide of iron	3.0
Alumina a trace, and loss	5.0
	100.0

"These results," remarks the analyzer, "seem to throw considerable light on the predilection of the Cotton plant for the neighborhood of the sea, which supplies plentifully the saline substances requisite to the perfect development and constitution of its woolly fruit. It may hence be inferred, that the compost or manure best fitted for Cotton plantations should contain neutro-saline matter with alkaline, calcareous, and magnesian bases. The presence of magnesia deserves notice, as it indicates marine food."

The subject of a rotation of crops is of recent interest. It was of course unmooted by the first cultivators of our great staple. In Georgia, a few planters have of late grown Cotton on every alternate ridge with corn occupying the intermediate ones. When the field is again planted, the Cotton rows are substituted for the corn rows, and those of the latter for the former. This plan might be pursued with benefit, except on the sea-board, where the high light lands, which are limited in quantity, and unfit for corn, are alone considered safe for Cotton. In a small way, potatoes,* rest,† and Cotton, or *spring* peas,‡ as a crop in lieu of potatoes, designedly cultivated for the offal, rather than the product, is a good rotation. On this subject there are two theories:—1st. That while the continuous cultivation of any one crop deprives the soil of the specific aliment essential to its fructification, another plant, requiring some other food, may be advantageously substituted. 2d. The celebrated chemist, De Candolle, says, "Of the nutriment which vegetables receive and digest, they exude an inconsumable or innutritive portion by their roots. This excrementitious matter is supposed to unfit or poison the soil for a second crop of the same kind, until it is either consumed or neutralized by cultivation." May not this be the true reason why it is so difficult to get a good stand on land planted for three or more consecutive years. As soon as the plants recover from their sickly state, and this takes place when the poisonous substance discharged from their roots is destroyed by tillage, the crop grows as vigorously, and the product is usually as good as rested grounds, where the same amount and kind of artificial nourishment have been applied. M. Olivier, member of the Institute of France, in describing the insects which devour the upper part of the roots of farinaceous plants, and which multiply to infinity, where the same soil presents to them, for years in succession, plants of the same or of similar kinds, says, "*these insects perish* as often as vegetables are cultivated which cannot serve for food for their larvæ." Edmund Ruffin, in the Farmer's Register, advances a similar postulate—"Every plant," he remarks, "is subject to be preyed on by its own peculiar tribes of insects, which are continued to be supplied by their proper food, and favored by the still continuing circumstances of the field, and, therefore, are increased continually in numbers, and in their destructive ravages, as long as the crop which fed them, and the circumstances which favored them, remain unchanged; and that these insects must be destroyed or greatly reduced in their numbers and power of mischief, by a total change of the growth, and of the treatment and condition of the field.§ These opinions, from high authorities, are well entitled to the attentive consideration of our planters. As the alternating system in relation to the successful culture of other crops is admitted to be necessary, its applicability to the Cotton husbandry cannot reasonably be doubted.

---

* See note C in the Appendix.—Southern Cabinet, vol. i. p. 405.

† Southern Cabinet, vol. i. p. 449.

* Allowing one year to intervene, Cotton is always advantageously grown on potato land, which, if assisted by salt mud, the benefit to the crop will be still more of a decided character.

† Ungrazed.

‡ The summer crop keeps the ground bare of vegetable matter. The other is succeeded by a heavy yield of crop grass.

§ Farmer's Register, vol. vii. p. 609.

As slovenly as was originally the tillage of the Cotton plant, the preparation of its produce for market was much more so. It was indeed so badly cleaned, as to be deemed suitable only to the coarser fabrics.* Up to about the year 1820, the gatherers took no especial pains to abstract the decayed leaves. The wool was sunned all day, and ginned frequently with the stained particles incorporated with it. These were removed in the process of moting, which was effected by women sitting on the floor where it was beaten with twigs. During the operation of ginning, no bags or boxes received the Cotton, and oftentimes large quantities were thrown together until the moters were prepared to examine them. In packing, an old iron axle-tree, or wooden pestle, the present instrument, was used. There were no reinspectors of the cotton before it was deposited in the bag, in which the spinner would frequently find, in addition to a large supply of leaves and crushed seeds, potato skins, parts of old garments, and occasionally a jack-knife. With many, the Cotton was ginned, moted, and packed in the same room. Very different indeed are the present processes, or rather the modes in which they are severally performed. Separate rooms for the seed and ginned Cottons, as well as for the wool, which, after it is gathered, is never exposed to the sun, have long been considered necessary in the sea-board parishes to ensure the proper after-handling of the crop. There are required a room for the whipper, if one be employed, which extracts the dirt and imperfect filaments; another for the assorters, who, provided with boxes for their clean Cotton, perform their work before a long table, covered with wire, or wooden slats, the ½ of an inch apart; a third for the moters, who also stand before a latticed table, and as often as a handful of Cotton is prepared, it is thrown into a wooden box, about three feet from the floor, and secured to the sides of the building immediately behind the moters respectively; a small room for the moted Cotton, and one for the packer, usually adjoining it; and a house or room, proportioned to the force employed, for the ginners, in which are boxes for the seed Cotton in the rear of the operators, and boxes under the machines for the ginned Cotton. The houses are lined on the inside with planed boards, and the windows of the assorting and moting rooms, and the gin-house, are glazed. All these accommodations are now to be found on nearly every plantation on the Sea-Islands and the adjacent country, and, it is said, in many of the upper Parishes.

The amount of labor expended in a day in preparing one bag of superfine Cotton of 300 lbs. weight, the produce of 1,500 lbs. in the seed, is as follows, viz:

Drier	1
Turner and feeder of the whipper	2
Assorters, 50 lbs. each	30
Ginners, 25 lbs.	12
Moters, 43 lbs.	7
Packer and reinspector	2
	54

It will thus appear that, if the foot-gin be used in an ordinary way, which, with a few exceptions, is the invariable practice, 54 laborers, at an expense to the owner of $27, estimating their services at 50 cents per day respectively, are necessary to the getting of one bag of Cotton properly cleaned. When the gins are propelled by steam, six persons only, male or female, to feed them, are required. If the wool be separated from the seed by Eaves's improved gin, to which steam power is applied, the aid of three men will be needed. In all other respects the labor is the same.

The cultivation and preparation of Cotton, as described in these pages, is peculiarly applicable to the southern half only of the long staple region. In the northern portion, but especially in the Santee country, there are differences in each, which it is important should be briefly noticed. Five acres to the hand, of which generally only one-third is manured, are planted. The ridges are four feet from each other, and the plants stand from 15 to 20 inches apart. In the culture of the crop, a machine of a triangular shape, called "the sweep," is used by a few as an assistant to the hoe. The morning after the Cotton is gathered, according to the wonted usage, it is assorted by the pickers; but, contrary to the plan of the sea-board, not afterwards; unless one or two hands, who attend to the scaffold, may be said to perform that service. The task in moting is from 20 to 25 pounds. The material points of difference, then, in the handling of the crop, between the lower and upper Parishes, or the former and Santee growers, consist in the processes of assorting and moting. The labor of the first is chiefly expended in cleaning the Cotton in the seed; that of the other, after it is ginned. This probably arises from the characteristic features of the two staples. Unless great caution be exercised in the moting of fine Cottons, the fibres will entangle, and the wool become lumpy and stringy. These results do not take place when the coarser qualities are cleaned in the ginned state.

Cotton in primeval times was disengaged from the seed with the fingers. Another mode of effecting that object, still common in certain parts of India, is, however, mentioned by Dr. F. Buchanan in his account of Bahar and Patna. "A great deal of the Cotton," says he, "is freed from the seed by the process of *beating*. At Arwal, the Dhunizas, who make a profession of *beating* Cotton, are allowed 1½ sers of grain for *beating* one ser of Cotton; and in one day a man *beats* four sers, equal to 4½ lbs. and of course receives 6¾ lbs. of grain." To the human hand the agency of the roller succeeded. The use of rollers, at first roughly constructed, is of very ancient date. Nearchus speaks of them as employed by the Hindoos for the purpose to which they are now particularly devoted. While a rude hand-mill was employed in the Plantation States, the treadle-gin, or some equally effective machine, was certainly in operation at the North. This appears from the declaration of Richard Leake of Georgia, who, in his letter to Thomas Proctor of Philadelphia, on the subject of Sea-Island Cotton, remarks, "The principal difficulty that arises to us is the cleaning of the seed, which I am told they do with great dexterity in your city with *gins* or machines made for the purpose."*

Soon after the commencement of our Revolutionary struggle, Kinsey Burden, deceased, late of St. Paul's Parish, constructed a roller-gin, believed to have been among the first ever made or used in South Caralina, which enabled him to clothe his negroes in garments fabricated at home. It was composed of "pieces of iron gun-barrels burnished and fixed on wooden rollers, with wooden screws to secure them,

* Ure, p. 145.

* Niles's Register, vol. vi. p. 334.

and wooden cranks to turn in the manner of the steel corn-mill." It was turned by one person and fed by another. Mr. Bisset of Georgia, in 1788, resorted to the "simple plan of a bench upon which rose a frame supporting two short rollers, revolving in opposite directions, and each turned by a boy or girl, and giving as the result of the day's work, five pounds of clean Cotton." These, and many others like them used subsequently in several parts of this State, were in part of the fashion of the Cotton hand-mill of India, which consists of two rollers of teak wood, fluted longitudinally with five or six grooves, and revolving nearly in contact. The upper roller is turned by a handle, and the lower is carried along with it by a perpetual screw at the axis. The present foot or treadle-gin,* first used in Georgia, was imported from the West Indies, and is probably unsusceptible of any advantageous alteration. To prevent the Cotton from being carried round about with the rollers, Mr. Harvie of Berbice, in 1820, obtained a patent for an improvement, which consisted in the application of a thin, long brush to the posterior surface of the rollers. From the liability of these to get hot in their rotation, a patent in the United States was secured by another person, for making them hollow for the free passage of cool air, or even water.

A very decided improvement on the treadle-gin, at least for many years it was so considered, especially in Georgia, was made about the year 1790, by Joseph Eaves, a native of Providence, Rhode-Island, but who then resided in the Bahamas. As originally constructed, Eaves's machine was a double gin, and had two pairs of rollers placed obliquely one above the other. By additional mechanism, consisting of iron teeth and pullies, and by a little assistance, it was made to feed itself. The mill was worked by horses and oxen, or by water. To this succeeded the gin of Mr. Pottle of St. Mary's, Georgia. He substituted two single rollers for the double ones, and placed them back to back, forming an angle with each other; both were driven with the same band-wheels, which were placed above and between them. Pottle's gins continued long in high repute in Georgia, but were used only by few planters in this State. Birney's, Simpson's and Nicholson's gins, and many others, bearing the cognomens of their inventors, followed in quick succession. In Whittemore's machine, it was thought that all the objections to the previous ones had been effectually removed. To run in the easiest possible manner, and to preserve the rollers from being heated, it was provided with friction-wheels and friction-rollers. Although, therefore, from these causes the Cotton received no damage, yet it was soon discovered that it cut the staple, and that this irremediable defect was in proportion to the velocity of the gin. It was consequently abandoned. Farris's and Logan's machines, which are slight modifications in the mechanism of Eaves's invention, were by many successfully employed for years, and they are still partially used with steam as the propelling power. Where this wonderful agent is at command, the common barrel-gin, originally worked by horses or oxen, is probably the most unexceptionable. "It is indeed nothing more than the foot-gin, to which greater power is applied by complicated mechanism. This consists of a large driving cog-wheel, working a small trundle-wheel. This smaller wheel gives motion to a large cylinder or barrel, round which from 8 to 24 sets of bands are passed, communicating with the pullies of as many Cotton-gins, which are fixed in rows on each side of it." As the young, the old and infirm, male or female, can engage at work as feeders, a very material advantage in favor of this gin is secured. To each laborer the daily average is about fifty pounds of clean Cotton.

All of the gins subjected to examination and trial in this State, except the first of Eaves's manufacture, are supplied only with two rollers, both of wood; or one of cast-steel and the other of wood; or both cast-steel, one covered with leather; or both of wood, one also with a leather covering. Cork rollers have also been tried. The desideratum is to prevent injury to the staple, either by cutting or heating it. To accomplish these great ends, at least a half million of dollars has been fruitlessly expended by artists, incited by the expectation of the highest reward, and distinguished for skill and perseverance in their profession. The notice of a new and improved gin* for both green-seed and black-seed Cottons, recently constructed by F. M'Carthy of Alabama, has been favorably received by the public. That it is destined to supplant Whitney's invention is probable from the fact that the Cotton prepared by it commanded, at one time last winter, three cents more per pound in the Mobile market than that cleaned by the latter. That it may subserve the purpose of the grower of Long-Cotton is inferred from the declaration of an acknowledged competent witness. A few pounds of the finest description of that staple ginned by this machine, and unmoted afterwards, the property of ——, was sent by him in December, 1842, to Mr. Houldsworth, the eminent spinner of Manchester, who returned an answer of which the following is an extract:—"We have carefully examined the sample of Mr. ——'s Cotton cleaned on a new ginning machine. It is remarkably clean, and in an excellent state for our purpose as respects openness." The gin, however, may be very liable to get out of order; may continue only for a short time to effect the desired object, and may with difficulty be repaired: in other words, the results of trial may show it to be an expensive mechanical agent.

For the silky Cottons produced on the Sea-Islands of South Carolina, the planter is indebt-

* In 1796, William Brisbane* received several foot-gins from his father-in-law in the Bahamas, which were erected under the direction of, and actually put into operation by, his wife. She had temporarily resided in Providence, and, being of an active and inquisitive mind, watched with interest the different processes of preparing Cotton for market. By this means, she was enabled to do what no gentleman, certainly in that section of the State, could accomplish. What disposition it was proper to make of the seed of the Cotton, which the gins very soon so freely furnished, was rather a perplexing question. Held to be of no value, it was first carelessly thrown on the ground; the hogs ate of it, however, and they died. It was then put into pens, but the pigs found their way between the interstices of the rails, and quickly shared the fate of their elders. As a dernier resort, and with a view permanently to be rid of the "nuisance," it was deposited in a small creek contiguous to the mansion house. There at low water it soon generated a miasmatic odor, which, when the wind was favorable, was so offensive as to create a strong feeling of prejudice against the farther culture of the crop.

* The gentleman named in page 180.

* See Note D. in the Appendix.

ed to the botanical skill and laudable perseverance of Kinsey Burden, Sen. of St. John's Colleton. An improvement in the texture of the wool engaged his earnest attention as early as 1804 or 1805. In one of those years, he raised from selected seed a "pocket" of Cotton, worth in the English market "25 cents per lb. more than any other Cottons at any price." From that time he labored zealously in this new branch of his profession until 1826, when he sold his first full crop, 60 bags, at 110 cents a pound. The crop of the following year commanded 125 cents per lb. It is proper here to observe, that between 1821 and 1829, the average price of common Long Cotton was 24 cents, and of the superior kinds from 35 to 60 cents. Mr. Burden's extraordinary success was for many years the theme of public notice and private discussion. All means to penetrate the arcanum of which intellectual efforts were capable had proved abortive. In March, 1827, "a report accompanied by sundry letters on the causes which contribute to the production of fine Sea-Island Cotton," was read before the Agricultural Society of St. John's Colleton, by their Corresponding Secretary.* The publication† of these papers created some excitement in the parishes. It brought the mind of the planter to bear with more intensity on the absorbing question which the report attempted to discuss. The remarks of the writer on the selection of seed induced many to think, that perhaps to this cause Mr. Burden's celebrity as a seller was indebted. Subsequently, William Elliott of Beaufort, through the pages of the Southern Agriculturist,‡ expressed his belief that the secret was in the seed; hence, that the furred seed should no longer be cast aside. Experiments were then instituted to try the truth of the new opinion, thus for the first time publicly avowed by two, and in conversation by several other persons The clean seed was rejected, and that coated wholly or partially with down, retained. The result was a complete solution of the mystery which had so long enshrouded this subject. One of the experimenters obtained for the small quantity grown by him one dollar a pound. The product, nevertheless, was so meagre as scarcely to be remunerating. This occurred in the year 1829. In the year previous, Hugh Wilson, Sen. of St. John's Colleton, appeared on a small scale, as the rival of his parish fellow-laborer. For ten bags of Cotton he realized 90 cents a pound, and for his two succeeding *crops* $1 and $1 25 cents a pound. For two bags of extra-fine Cotton, raised in 1828, $2 per pound was received, the highest price ever obtained in this or any other country from which Cotton wool is exported. Mr. Burden's discovery was held to be so valuable to the State, that he was induced to forward a memorial to the Legislature offering to sell his secret for $200,000; he resigning all his seed, except what was necessary for his own crop, and communicating the mode of perpetuating the silky properties of the new Cotton fibre.§ The memorial, for reasons satisfactory to the applicant, was never presented.

The farther history of this sudden revolution in one of our chief staples need not be given. It is proper, however, to add, that while the quality of the wool has been vastly improved, the product of the plant has been more than proportionally diminished;* although, therefore, the pecuniary circumstances of individuals have been greatly meliorated, the planters generally have sustained a loss—in some instances to an almost ruinous extent.

Cotton may appropriately be divided into three kinds: 1st. Herbaceous Cotton; 2d. Shrub Cotton; 3d. Tree Cotton.† The first is the most useful, and is cultivated in nearly every country congenial to the gossypium. It exists native at Aleppo, in Upper Egypt, Arabia, and in Senegal. Of the seven varieties‡ of the Shrub Cotton, one or other grows spontaneously in the tropical regions of Asia, Africa, and America. In the latter continent, the Hirsutum or hairy, (seeds greenish,) and the Barbadense§ or Barbadoes Cotton, (a black seed,) are indigenous.‖ To the Shrub species all the South American, and most of the West India Cotton, which is long-stapled, is to be referred. The Tree Cotton, according to one authority, grows in India, China, Egypt, the interior and western coast of Africa, and in some parts of America; by another, it is a native of India, Egypt and Arabia.

Quatremere Disjouval, a prominent member of the Academy of Sciences of Paris, in speaking of the influence of climate on the texture and quality of Cotton, advances the following hypothesis: That the produce of the countries immediately under or nearest the Equator, is to be considered the type of excellence, and is distinguished by its fine silky fibre, the depth and peculiarity of its color, and the hight and permanency of the plant. In proportion, he remarks, as we recede from the Equator, these strong marked characters disappear, the fibre becomes coarse, its color perfect white, and, on the shores of the Mediterranean, we behold the lofty and flourishing tree of Hindostan dwindled down into a stunted annual shrub. Of these broad and unqualified assertions, there is but one that rests on a tenable basis: that the perennial plant of the Equator becomes an annual in a higher latitude. The averment that the finest and the deepest colored Cotton is the produce of the tropical countries is reiterated on

* Whitemarsh B. Seabrook.

† Southern Agriculturist, vol. i. pp. 25, 71, 119.

‡ Southern Agriculturist, vol. i. p. 151.

§ At one time, William Seabrook, a wealthy and enterprising planter of Edisto Island, was prepared, and publicly declared his design, to offer the discoverer $50,000 for the information on this subject of which he was possessed. About twelve months afterward, Mr. S. declined to purchase, because, in his belief, conjecture had yielded to certainty—to the seed solely was traceable the fine Cotton which Mr. Burden continued to grow.

* See Note E. in the Appendix. The diminution in the exports since 1830, when fine Cottons began to be generally cultivated, compared with the eleven preceding years, is very large.

† Among some of the ancient writers, says Dr. Ure, the Cotton Tree, *bombyx pentandrium*, is confounded with the Tree Cotton. The former does not belong to the gossypium family. It was probably the Cotton Tree, "six yards high," which Marco Polo saw growing at Guzzerat.

‡ Gossypium Indicum, or the Indian; viti folium, or vine-leaved; hirsutum, or hairy; religiosum, or the Cotton of Nuns—this species is very difficult to be detached from the seeds; the Nuns at Tranquebar were first employed in the operation; latifolium, or broad-leaved; Barbadense; Peruvianum.

§ Called by the English in the East Indies, says Dr. Ure, the Bourbon Cotton, because, about 26 years ago, it was introduced there from that island. The seed, he farther (erroneously) remarks, originally came from the West Indies.—Pp. 71. 72.

‖ Ure, pp. 65—67.

even higher authority.* This is false as a general proposition, and only true concerning locations. The coarsest Cottons known in commerce, except some from Peru, between 5° and 15° south, which are of a dark hue, and as coarse as the wool of sheep, are the Bengal, 24° north, and the Surat, 21° 10′ north; the finest, and in all other respects the best, Cottons are produced on the Sea-Islands of South Carolina, 15° beyond the Tropic of Cancer. To the latter, as well as those of the Isle of France, 20° 9′ south, Dacca, 23° 55′ north, and Egypt, about 30° north, the Cotton of Guiana, within 5° of the Equator, is decidedly inferior. The worst native Cotton in the east grows in Java, 7° south. The Cottons of South America in the hottest region, it is true, are of a better quality than those of the Levant; on the other hand, some of the West India kinds are lower in value than the green seed varieties of this country. These, too, as is especially the case in our State, oft-times grow within a few miles of the long-staple Cotton, and in certain localities side by side; yet the best sorts of the latter are worth eight hundred per cent. more than the best sorts of the former. So much for the effect of climate on the fibre of Cotton, in opposition to the gradation of the French Philosopher's system. With regard to the color of Cotton, the yellowish hue of which is indicative of fineness, climate has but an inconsiderable effect. The Cottons on the coasts of South Carolina and Georgia are tinged, and some varieties deeply, with yellow, while the inland districts of those States, and their more southern neighbors, as far as the Red River, produce Cotton of great whiteness, and far inferior in strength and fineness. A portion of the West India Cotton is of a cream color; and some from India is represented to have "a slight tinge of Aurora." The Cottons of Bengal, Madras and Surat, of Smyrna, Cyprus, Salonica, and all parts of the Levant, are distinguished by their want of color—this is also said of Siam, famous for its nankeen. The Dacca Cotton† is deeply colored, and, although it is consumed in that Province, and consequently unknown in commerce, still, from an examination‡ of the muslin, denominated, in hyperbolical language, "webs of woven wind," and "which can hardly be felt when expanded," it has been satisfactorily ascertained to be of a coarser fibre than the better qualities of our Cottons, grown near the ocean. While a pound of that Cotton, in a single thread, would extend to the distance only of 115 miles, 2 furlongs, and 60 yards, Cotton Yarn is spun in England, making 350 hanks to the pound weight, each hank measuring 840 yards, and the whole forming a thread to 167 miles in length.§ Farther, 420 hanks certainly, and, it is asserted, from 480 to 500 hanks per pound, have been spun in Manchester with Cotton from South Carolina—thus yielding a thread from 197 to over 238 miles long.

The valuable properties* of Cotton Wool in their relative order are strength, fineness, length, evenness and freedom from knots and entanglements. The superiority of our Sea Island Cotton over all other kinds,† is owing to their fibres being "spiral springs, singularly adapted to the spinning process, readily entwining with, and sliding over, each other, during the formation of a thread with an easy elastic force. The filaments of these Cottons vary from one to" two "inches, and in breadth from 1-1500th to 1-3000th of an inch."‡

But to return to the subject of our comments. Disjouval's theory is opposed to analogical reasoning. Nature is bountiful in all her works, but these are not bestowed with the hand of favoritism. For poverty of soil, man is blessed with health and the uninterrupted exercise of all his faculties. Where the land is fertile, and teems with a variety of rich gifts, disease is the inseparable concomitant. If certain products grow more luxuriantly in the warmest latitudes, the quality of those products improves as you recede from the Equator, until a point is reached where retrocession takes place, and some other plant is substituted. This is especially true of Cotton. In the exceptions which apparently militate against the general proposition, you still find its truth maintained in the absence of things essential to the cultivator's physical or moral well-being.

To preserve the properties of Cotton, remarkable for production or quality, annual selections, it is here necessary to repeat, are personally

---

* Rees's Encyclopædia—article *Cotton*.

† A variety of the common herbaceous annual Cotton of India. [*Baines, p.* 62.

‡ This was made by Sir Joseph Banks in India, who used the following language on the occasion? "The portion of skein which Mr. Williams gave to me weighed 34 3-10ths grains: its length was 5 yards 7 inches, and it consisted of 196 threads. Consequently its whole length was 1018 yards and 7 inches. This, with a small allowance for fractions, gives 29 yards to a grain, 203,000 to a pound avoirdupois of 7,000 grains; that is, 115 miles, 2 furlongs, and 60 yards." [*Baines, p.* 59.

§ The value of Cotton Yarn is estimated by its length, and is numbered so as to determine the number of hanks requisite to weigh one pound. One pound of No. 100 contains 84,000 yards. "The extreme of fineness," says Mr. Baines, in his work on the Cotton Manufactures of Great Britain, published in 1835, "to which yarns for muslins are ever spun in England, is 250 hanks to the pound, which would yield a thread measuring 119¼ miles. A pound of fine Cotton, manufactured into the finest lace, is worth from 8 to 15 guineas, and has been sold as high as 100 guineas."

[*M'Culloch's Com. Dic.*—article *Lace.*

* Unlike that of flax, which is vitreous, the lustre of Cotton, observes Dr. Ure, is pearly. The flax fibre is straight and jointed like cane, but that of Cotton is either twisted right and left, or coiled like a cork-screw.

† Ten years ago, the difference between the staple of our Sea-Island Cotton and that of Egypt, Brazil, and some of the West India sorts, was about 20 per cent. in favor of the former. Owing to a more favorable climate, superior husbandry, and the raising of superfine qualities, the difference may now be estimated at from 30 to 50 per cent. and over, if the silkiest kinds be included. See Note F. in the Appendix.

‡ Though these Cottons are so much superior to that of Dacca, yet the skillful English weaver, supported by the triumphant results of mechanical science, is unable to compete with the feeble hand of the Hindoo in the manufacture of a certain class of goods. This is ascribable to the remarkable acuteness of external sense, particularly of touch, and the flexibility of the fingers of the people of that region; "the high estimation in which the calling of the weaver is held; and the confining of the production of peculiar kinds of cloth to peculiar districts, in which they have been fabricated from generation to generation." In former days, from 900 lbs to 1,000 lbs. in the seed were necessary to yield 300 lbs. or one bag of ginned Cotton. Now, in reference to our better qualities, it requires from 5 lbs. to 7 lbs. of the former to make one of the latter. Although a still finer Cotton, it is experimentally known, can be grown, yet, from the poverty of its product, it is believed that the point of perfection, as far as a profitable culture is concerned, has been reached.

made by the planter. A more irksome duty, requiring, too, much experience and skill, is seldom performed. But, in surmounting one difficulty, another of his own creation awaits him. This is imputed to the ill-judged manner of disposing of the seed, which is peculiarly liable to run into varieties. This last consideration readily accounts for the confounding of all distinctions by botanists, and their disagreement as to the number of varieties of the gossypium. Linnæus reckons five, and other writers severally eight, eleven, thirteen, thirty-four, forty, and even one hundred kinds. The varieties are still more difficult to be enumerated in consequence of the influence of climate, soil, manure, cultivation, and intermixture of seeds. These causes not only tend to their multiplication, but to change the longevity of the plant. The shrub cultivated as an annual in one country, becomes perennial in another. The arboreum continues for five or six years in the West Indies—here it is an annual. In, probably, every acre of a Cotton-field several kinds of the gossypium may be found. The differences are sometimes minute, but even without inspection by a botanical eye, they may be detected. The select seed of the grower, by the usual practice, is carefully deposited in choice ground, which, if there be many acres, lies in many instances immediately contiguous to his main crop—sometimes a narrow path alone separating them. Hence the pollen of the larger field impregnates the pistils of the smaller field. In this way the peculiar character of the wool is lost, and another variety springs up. The operation of the *farina fecundans* of plants no longer rests on surmise and conjecture. By the discovery and observation of John Bywater, of Liverpool, on *animalculæ infusoriæ*, and on the physiology of plants, we are furnished with some curious and interesting information on this subject. His examinations go to show that the small capsules of the *farina fecundans* given out when in contact with water, an abundance of animalcules, which are supposed to be the mysterious agents by which vegetable secretions are carried forward. The obvious expedient, then, is the rearing of varieties of the same species at such distances as to prevent the intermixture of pollen of the plants. This is successfully done in Scotland with garden seeds, which, it is asserted, may always be found pure in certain sections of that country. If the size of the plantation admit, unless some such scheme be adopted, specific differences cannot be maintained, and the labor of the planter will be permanent.

The length to which this memoir has already been extended, forbids the introduction of many topics, which otherwise would invite a passing notice. A few remarks, therefore, only on one or two collateral points will now be submitted. A short time after Cotton, as a crop, had been successfully cultivated in this State, it was attacked by some of its natural foes. In Georgia, the caterpillar, *noctua xylina*, or cotton-moth, made its appearance as early as 1793.* Seven years afterwards, they commenced the work of devastation in South Carolina.† In 1804, the crops, which would have been devoured by them, were, with the enemy, effectually destroyed by the hurricane of that year. In 1825,* the visit of the worm was renewed, and its ravages were universal and complete. In 1827, '29, '33, 34, '40, '41 and '43, the lower parishes† generally, or particular locations, suffered greatly by its depredations.

That the Cotton-moth frequently survives the frosty season is nearly certain. An examination of that neighboring woods, especially after a mild winter, has often been successfully made for that purpose. They were seen by the writer in May last at the edge of a strip of pines, within a few yards of a Cotton field. In the winter of 1825, Benjamin Reynolds of St. John's Colleton, deceased, found them in the woods, principally on the cedar bush, encased alive in their cover, impervious to water, and secured to a twig by a thread. The pupæ, wrapped in Cotton-leaves, from their bleak exposure, invariably die on the approach of cold weather.

The injury that has often been committed by the caterpillar is most incredible. In one week they have denuded of its foliage every stalk in the largest field. The Cotton plant of Guiana was very subject to the attack of the Chenille, as the caterpillar is there called. In the Bahamas, between March and September, 1788, no less than 280 tons of Cotton on a moderate scale were devoured by this worm.‡ Among the causes of failure of the crop in that quarter, as ascertained by answers of the most intelligent and experienced planters to questions proposed by the House of Assembly, the most prominent is the destruction by the Chenille. The same cause produced the abandonment of the gossypium culture in several of the West India Islands.§

It will be perceived, from what has been said, that the attack of the caterpillar in this country is not annual. This of itself is satisfactory evidence, that the "evolution of the larvæ, and the transformations and death of the insect, or the appearance and disappearance of the Chenille, are regulated or influenced by particular states of the atmosphere;" and probably, as close observers have remarked, by "the phases or changes of the moon." Every effort which the most scrutinizing and active minds have hitherto suggested to prevent their propagation, or to render innoxious the career of these insatiable depredators, has utterly failed. From this consideration, added to their great tenacity of life and extraordinary fecundity, it is supposed that the ordinary means of affecting either of those desirable ends will never succeed. The caterpillar, after being plunged into spirits of turpentine or corrosive sublimate, is as ready for his all-day meal, as though it had been immersed in pure water. If the section of the field in which the pupæ only are seen, be burnt, the progress of the worm, as experience testifies, will scarcely be impeded. Lime will quickly produce death, and so will oil rubbed on the abdomen, but how can these be used efficaciously on the larvæ, when from five to ten hundred on a plant are not unfrequently seen? Or can the pupæ, reposing in their glutinous cells, be affected by any external application? In this way the planter reasons, and when the enemy appears, no means whatever are now

* "In that year," says Mr. Spalding, "the destruction was complete. From Major Butler's field of 400 acres, only 18 bags were made."

† This is accounted for by the fact that Long Cotton, as a crop, was not generally grown in South Carolina until 1798.

* Between 1804 and 1825 their depredations were only occasional, and then confined to particular fields.

† The caterpillar is seldom seen in the upper parishes.

‡ Edwards's West Indies.

§ Edwards's West Indies.

employed to preserve the fruits of his labor. As it is the will of Providence, he assures himself submission becomes a duty.

In relation to this matter, it may be asked—is the object at which the grower has so long aimed, unattainable? Let the following statement answer. The caterpillars appeared in several parts of the field of John Townsend, of St. John's Colleton, early in August last. The plants were luxuriant in growth, and tender in weed and leaf, and the weather being warm and rather moist, was altogether propitious to the spread and multiplying of the worms. By the adoption of prompt and vigorous measures, some of which are new, and a rigid perseverance in their execution, his crop escaped unscathed, while many of his fellow-laborers, who lacked faith in any remedy, suffered greatly. In the attainment of his purpose, the means resorted to by Mr. Townsend were the following:

1. His people searched for and killed both the worm and the chrysalis of the first brood.

2. On the appearance of the second brood, he scattered corn over the field to invite the notice of the birds, and while they depredated on the worms on the tops of the stalks and their upper limbs, the turkeys destroyed the enemy on the lower branches.

3. When in the aurelia state, the negroes crushed them between their fingers.

4. Some patches of Cotton, where the caterpillars were very thick, and the birds and turkeys could not get access to them, were destroyed.

5. The tops of plants, and the ends of all the tender and luxuriant branches, where the eggs of the butterfly are usually deposited, were cut off.

By these means, resolutely pursued, although at one time the prospect of checking the depredators was almost cheerless, not the slightest injury to the field was sustained.* As the reasons for the measures adopted by Mr. Townsend are perhaps apparent, it behoves the planter to reflect that, on the first visit† of the caterpillars, while their number is few, they might be, if not entirely gotten rid of, materially lessened; that in the pupa state they are easily detected, and of course as easily killed; and that while early and indefatigable exertions may be crowned with success, delay or tardiness in his operations will certainly be fatal.

In Georgia, the attack of the red bug, a winged insect with a long proboscis, with which it pierces the green pods, extracting the juices of the seed, and leaving the capsules blighted and hard, and the Cotton stained of a deep yellow or red color, are coëval with that of the caterpillar. Although this insect is an occasional depredator in the fields of this State, yet no material loss has been sustained by it. This is also true of the *apata monachus*, a species of the scarable, the larvæ of which, eating with a revolving motion, penetrate to the wood and pith of the Cotton-stalk. Red bugs, that prey on the roots and leaves of Cotton, usually early in May, though their appearance is not uncommon in April, are certainly becoming more destructive and extensive in their visits. By the latter, the growth of the plant is in general only checked; but the former,* by arresting the ascent and circulation of the sap, generates a disease, which, if it do not destroy, renders the plants comparatively barren. The grub or cut-worm, if the spring be cold, and east winds prevail, is a troublesome, but not a formidable, enemy. The blast or blight is now, perhaps, the most common of all the diseases to which Cotton is liable. Its tendency is to check or destroy the vegetative powers of the plants. The causes of blast are three-fold:—excess of vegetation, corresponding with plethora in animals; exhaustion of vegetation, terminating in a state similar to gangrene; and wetness at the roots. When the first takes place, the Cotton is pronounced "flaggy;" the appearance of the second is denominated "canker," of which there are two kinds: in one the plant is stripped of its fruit and foliage, except a few green buds on the top; in the other, the leaves wither—the stalks assume a dark hue, and the pods drop, save those nearly full grown, which become hard and black, though they produce Cotton. In relation to the third cause, as long as the roots are saturated with water, the procreative energies of the plants are arrested, and all the fruit previously formed quickly disappears. While the manuring system, where judiciously practiced, has almost effectually removed one cause, and the main one, arising from vegetative exhaustion,† it has palpably increased the plethoric habits of the plant, and multiplied the number of its diseases, most of which, there are good grounds for believing, is animal. It should, hence, be the paramount duty of the grower, unless an antidote, like salt for instance, be applied, to use sparingly those manures, which furnish a matrix for generating or nourishing the insect brood.

It has been well said by a judicious observer‡ that, of all the productions to which labor is applicable, the Cotton plant, more particularly the species grown on the Sea-Islands, is the most precarious. In its first stage it is attacked by the grub; it is devoured by bugs in the second; and by caterpillars in the third; it is often withered by the wind in its infancy, and by the blight in maturer age: and when the grower, excited by all the causes which hope so kindly presents to his ardent imagination, is about to reap the golden harvest, an equinoctial gale, or a few saturating showers, deprive him at once of the fruits of his labors, and bid him to reassume the toils and vexations of his vocation. And here it may pertinently be added, that "when the produce is raised, at an expense to the cultivator which perhaps is not equaled in any other pursuit—an expense too that is permanent and cer-

* The experiment cost Mr. Townsend 2½ acres of Cotton, about 15 bushels of corn, and the work of all his people for about five days. This gentleman was roused to unusual action by the reflection, founded on analogical reasoning that, of one moth of feeble wing and tender body, which a vigilant eye might discover and destroy, the progeny in six weeks amount to at least twenty-six millions of worms.

† This is communicated to the planter through the sense of smell. When the Chenille appears, a very fragrant odor issues from the field, which is not possessed by the worm itself, or the plant separately.

* Wherever salt is applied on the listing, at the rate of one pint to the task-row, (105 feet,) it is confidently believed that the bug will not appear.

† Sometimes on poor high land, assisted with any matter, salt-mud especially, that brings the plant rapidly to maturity, this disease will appear, if a drouth be succeeded by heavy rains in August. To prevent this, do not use mud alone, but in connection with some stimulating aliment. Such lands should not be planted until the last of April.

‡ Bryan Edwards, in his History of the West Indies.

tain, while the returns are more variable and fluctuating than any other—the selfish and grasping policy of man is oftentimes more destructive than even the anger of Omnipotence."

Apart from the suicidal legislation of the Federal authorities, our planters have no cause for despondency. Every view of the subject on the contrary imperiously invites them to persevere. In confirmation of this assertion, there are two considerations, one of a general and the other of a local character, to which I would briefly invite your notice—the first showing, that better and cheaper Cotton can be grown in this country than in any other section of the world; the other, that by a little more attention to the processes that succeed the gathering season, the disparity between the South Carolina planter and his more southern associates, in relation to the money value of their respective crops, would be considerably lessened. And, first, in reference to nearly every part of the globe where Cotton is grown for European consumption and manufacture, it is undeniable that, while the production of the raw material in the United States is rapidly extending, in other countries it is either stationary or diminishing.* Secondly, although with regard to the amount of Cotton per acre, South Carolina cannot compete with the Gulf States,† yet her planters, in consequence of this apparent misfortune, are enabled to send the wool to market greatly improved in value by a superior mode of handling. One cent more per pound, occasioned by a better style of preparation, taking the crop of last year as a basis, would yield to the growers over $900,000.

The American saw-gin, and the wonderful discoveries and inventions in England in the operations of carding, spinning,‡ and weaving Cotton, gave birth to the Cotton-husbandry in the United States. The application of steam to the propelling of the Cotton-machinery, and for purposes of navigation; the improvements in ship-building, which enable vessels that formerly carried only 900 pounds to the ton of register, now to carry from 1500 to 2000 pounds to the ton, separate from the skill and industry of the cultivator, have materially contributed to its unparalleled extension.

In consequence of its abundance, and the facility with which it can be twisted into a thread, Cotton is the cheapest of all the materials for clothing; and what, perhaps, is of scarcely less importance, it is in a high degree conducive to health. For these reasons, it is gradually supplanting flax, silk, and wool, as an article of wear, or forms a component part of all of them. From its exchangeable value, and constituting as it does more than one-half of our exports,* it has greatly accelerated the growth and flourishing condition of the Plantation States; aided to build up the prosperity of their political associates, and added vastly to the wealth and greatness of the Union.† Nor has its benefits been confined to the North American republic. The enlargement of our Cotton-husbandry, by arousing the energies of the British artists, created many of those extraordinary mechanical improvements, which have essentially contributed to render England the most powerful nation of which history furnishes an example. The community of interests existing between that sea-girt isle and our highly favored land, owes its strength and maintenance to the downy fleece of a long-neglected shrub, which, by the unexampled skill and ingenuity of the one, and the untiring industry and perseverance of the other, has become "the wonder of agriculture in the United States, and the miracle of manufacture in Europe." Without attempting to show the manifold blessings that Cotton has conferred on the political and social conditions of other nations, it may perhaps be only necessary to remark, that every where society feels its friendly and invigorating influence. All classes and occupations, though its culture and manufacture, on an extended theatre, are of modern date, already acknowledge that the "vegetable wool" is among the greatest gifts of God to his people.

The grand revolution which has increased the production of the gossypium in this country over 5,676 times in half a century, has been brought about not by governmental patronage and the influence of monopolies, but against the unceasing plunderings of the one at the resistless and unrelenting fiat of the other. The history, indeed, of no pursuit affords so extraordinary a result from the isolated labors of its followers, and under circumstances so oppressive and discouraging, as that of the Cotton-grower of the United States. He sows, and endures the heat and burden of the day, but others riot in the harvest. A juster and nobler policy, it is hoped, will ere long direct the Federal councils. England now pays to America thirty-five millions per annum for a single product of our fields. To keep her in this position is a task of easy accomplishment, if commerce be free, and the planter be released from the shackles of pernicious and unwarrantable enactments. As an exporter of the main crop of both countries, Texas can never be the rival of the United States, unless the spirit that has so long swayed the constituted authorities of the latter shall unfortunately continue in the ascendant. Under the guidance of a patriotic home legislation and international interests, these co-terminous communities would constitute the region which might abundantly supply the nations of the globe with its great staple commodity, and at a lower rate, too, than ever was done by the labor of man.

---

* Note A. and Tables 3 and 4, in the Appendix.

† While the production of the Gulf States has doubled itself for the eighteen years from 1824 to 1841 inclusive, that of the Southern Atlantic States for the same period has remained nearly stationary.

Actual average of the eighteen crops from 1824 to 1841:—

	1st 6 years.	2d 6 years.	3d 6 years.
	Bales.	Bales.	Bales.
Gulf States	253,000	504,000	1,030,000
South'n Atlant. States	433,000	522,000	529,000

‡ Of the inventions of the "water-frame," by Arkwright, the "spinning-jenny" by Hargreaves, and the "mule-jenny" by Samuel Crompton, the first two occurred a short time before the American Revolution—the last in 1779. "Of the four great divisions of the globe," remarks Mr. Baines, "Europe was the last to receive the Cotton manufacture, and England was among the last to engage in that branch of industry. So immense is the extent of the British Cotton manufacture at this time, (1835,) that the yarn spun in a year would, in a single thread, pass round the globe's circumference 203,775 times; it would reach 51 times from the earth to the sun; and it would encircle the earth's orbit eight and a half times. The wrought fabrics of Cotton exported in one year would form a girdle for the globe, passing eleven times round the Equator."

* The total value of the exports of the produce of the United States during the year ending on the 30th of September, 1841, was $106,382,722. Of this, Cotton furnished $54,330,341, or more than one-half. South Carolina, as her share, contributed $8,011,392.

† It is generally understood that the manufacturers are realizing 20 per cent. on their capital.

APPENDIX TO THE COTTON PLANT.

NOTE A....*Exports of Cotton grown in the Plantation States of North America.*

Year.	Lbs.	Year.	Lbs.
1784.....	*1,200	1814..(War)..	17,806,479
1785.....	*2,100	1815.....	82,998,747
1786.....	*900	1816.....	81,747,116
1787.....	*16,350	1817.....	85,649,328
1788.....	*58,350	1818.....	92,471,178
1789.....	*126,300	1819.....	87,997,045
1790.....	*12,150	1820.....	127,860,152
1791.....	189,316	1821.....	124,893,405
1792.....	138,328	1822.....	144,675,095
1793.....	487,600	1823.....	173,723,270
1794.....	1,601,700	1824.....	142,369,663
1795.....	†6,276,300	1825.....	176,439,907
1796.....	†6,106,729	1826.....	204 535,415
1897.....	3,788,429	1827.....	294,310,115
1798.....	9,360,005	1828.....	210,590,463
1799.....	9,532,263	1829.....	264,847,186
1800.....	17,789,803	1830.....	298,459,102
1801.....	20,911,201	1831.....	270,979,784
1802.....	27,501,075	1832.....	322,215,122
1803.....	41,105,623	1833.....	‡397,780,020
1804.....	38,118,041	1834.....	413,928,240
1805.....	40,383,491	1835.....	449,039,250
1806.....	37,491,282	1836.....	469.566,900
1807.....	66,212,737	1837.....	594,494,010
1808 (Embargo)	12,064,366	1838.....	448.975,560
1809 "	53,210,225	1839.....	118,685,550
1810 "	93 874,201	1840.....	539,531,850
1811 "	62,186,081	1841.....	555,579,420
1812..(War)...	28,892,544	1842.....	†785,221,800
1813.. " ...	19,399,911		

* From 1784 to 1890, inclusive, the number of bags exported (Note B) was respectively 8, 14, 6, 109, 389, 842, 81, which are estimated as weighing 150 lbs. each.

† Some foreign Cottons included.

‡ The bags from 1833 to 1842, inclusive, are estimated to weigh 330 lbs. each.

NOTE B....*Early Imports of American Cotton.*

[From Gore's Liverpool Advertiser.]

"By referring to our import list at the period of which the following is a copy, we find the first arrival of Cotton wool, the produce of the United States of America, took place at this port, 20th January, 1785, of one bag, per Diana from Charleston, to John and Isaac Teasdale & Co. We have had this confirmed by the only surviving partner of that firm, William Teasdale of this place, whose uncle Isaac went from Manchester to settle at Charleston to promote the trade.

"An account of the import of the first Cotton brought to the port of Liverpool, the growth of the United States of America, 1785. Jan. 20th, Diana, from Charleston, to J. & I. Teasdale & Co. one bag; Feb. 17th, Tonyn, New-York, James Kenyon, one bag; July 21st, Grange, Philadelphia, W. Rathbone, Jun. 3 bags; Nov. 17th, Friendship, Philadelphia, J. & I. Teasdale & Co. 9 bags. Total, 14 bags.

"1786. May 4th, Thomas from Charleston. Peter Marrow, 2 bags; June 21st, Juno, Charleston, J. & I. Teasdale & Co. 4 bags. Total, 6 bags.

"1787. April 5th, John from Philadelphia, John Jackson, 6 bags; June 7th, Irish Volunteer, Charleston, James Hargreaves, one bag; June 14th, Wilson, New-York, N. P. Ashfield, 9 bags; June 28th, Grange, Philadelphia, James Barrow, 6 bags; James Appleton, 2 bags; Peel, Yates & Co. 1 bag; August 2d, Henderson, Charleston, J. & I. Teasdale & Co. 40 bags; Dec. 13th, John, Philadelphia, George Goring, 37 bags; Order, 7 bags. Total, 109 bags.

"1788. January, Mersey from Charleston, Peter Marrow, 1 bag; Grange, Philadelphia, George Goring, 5 bags; Jan. 31st, Sally, New-York, Rathbone & Benson, 4 bags; June 26th, John, New-York, Samuel Green, 30 bags; July 3d, Harriott, New-York, Backhouse & Lowe, 62 bags; Dickson & Pemberton, 60 bags; *N. P. Ashfield*, 29 bags; Peel, *Yates* & Co. 4 bags; Rathbone & Co. 3 bags; S. Newall, 1 bag; Order, 16 bags; July 5th, Grange, Philadelphia. Jas. Ansdell, 68 bags; Polly, Charleston, George Goring, 42 bags; J. & I. Teasdale & Co. 26 bags; Nov. 20th, Clio, Charleston, J. Douglass, 9 bags; William, Baltimore, Warbreck & Holt, 31 bags. Total 389 bags.

"1789. Jan. 8th, Grange, Philadelphia, W. Wallace, 4 bags; James Ansdell. 6 bags; Feb. 5th, Manchester, Charleston, J. Teasdale & Co. 7 bags; John Wright, 1 bag; Feb. 29th, Aurora, New-York, Rathbone & Benson, 165 bags; Peel, Yates & Co. 1 bag; Backhouse & Low, 7 bags; Order, 158 bags; May 21st, Alexander, Virginia, Thomas Moss, 4 bags; July 2d, Levant, Philadelphia, E. & R. Bent, 7 bags; John Jackson, 25 bags; July 9th. Grange, Philadelphia, John Jackson, 17 bags; July 23d, Manchester, Charleston, J. Coulburn, 6 bags; Oct. 1st, Lydia, New-York, James Kenyon, 10 bags; Robert Abbott, 10 bags; J. R. Freme, 2 bags; Dec. 10th, Springvale, Maryland, Kensington & Co. 71 bags; Rathbone & Co. 30 bags; Dec. 24th, Grange, Philadelphia, Golightly & Co. 2 bags; James Ansdell, 25 bags; S. Brown. 4 bags; Samuel Grey & Co. 43 bags; C. Weatherhead 94 bags; J. Jackson. 43 bags; J. Micklethwaite, 100 bags. Total, 842 bags.

"1790. January, Lady Penrhyn from Philadelphia, E. & R. Bent, 58 bags; Feb. 4th, Polly, Charleston, John Teasdale & Co. 12 bags; William Coulborne, 7 bags; July 29th, Mary, Georgia, Andrew Aikin, 2 bags; Polly, Charleston, John Teasdale & Co. 2 bags. Total, 81 bags.

"It will thus be perceived, that the total import of Cotton into Liverpool during the six years from 1785 to 1790, inclusive, was 1441 bags. Though the above statement shows a progressive increase, it appears that the demand was neither uniform nor extensive, the import in 1789 having exceeded that of the following year 731 bags. From this period, however, the trade, especially as regards Liverpool, has increased with astonishing rapidity. In the year 1785, the import amounted to no more than 14 bags, and, in 1789, which is the largest import shown in the above statement, it was 812 bags."

NOTE C....*Properties of Marsh-Mud*....[Referred to at page 223.]

When dried.	*Water of absorption.*	*Organic matter.*	*Increase in weight after being thoroughly drenched in water.*	*Rates of drying from a condition of saturation.*	*Silica.*	*Alumina.*	*Water of absorption and organic matter.*	*Peroxide of iron with carbonate of lime and phosphorate of lime.*	*Carbonate of lime.*	*Phosphate of Lime.*	*Peroxide of iron.*	*Oxide of iron and phosphate of lime.*
A	lost.											
B												
C	2.37	2.66	321.	14.0 of water	92.57	1.70	5.03	0.70				
D	2.83	3.83	342.		91.64	1.70	6.16	0.50				
E	2.66	1.90	305.		94.00	0.94	4.56	0.50				
F	1.66	1.75	293.	11.0	95.00	0.79	3.41	0.80				
G	2.83	2.16	325.		93.00	0.81	4.99	1.20				
H	2.36	2.41	315.	12.0	93.23	1.05	4.77		0.35			0.60
I*	11.36	8.33	480.	28.7								
K*	.14	9.66	605.	39.0	61.75	9.00	23.66		0.29	.20	5.80	
Pure Sand			235.	6.8								

* Marsh-Mud.

NOTE D.

"To an iron frame, 4 feet breast and 3 feet high, is attached in front, in a horizontal position, a 2 inch roller covered with the best kind of sole-leather, grooved (say 1-16th of an inch deep) diagonally—the grooves being an inch apart. Pressing lightly against this roller, from the centre upwards, and confined to its place by small steel clamps, is a very thin steel plate, made perfectly smooth and beveled on the under side, which comes in contact with the roller. On each end of this roller is a pulley, connected with other pulleys by bands. The Cotton is placed on a feeding-board, and drawn in by the action of the roller between it and the plate the entire length of the fibre, (the seed exposed and resting against the plate,) where it is held firmly. In the mean time a vibrator (which is a plate of iron 2 inches broad with square notches in the upper edge, and screwed to a piece of wood to support it) attached to two upright pieces of wood an inch square, which are attached to each end of an iron shaft (1¼ inch in diameter and placed in a horizontal position,) by means of sliding cranks, which give an eccentric motion, and cause it (the vibrator) to play up and down with great velocity, just clearing the plate; pushing the seeds upwards; clearing the Cotton, which, thus relieved, passes on (the leather or ginning roller being cleared by a smaller one resting on it, and lying just behind the plate) to an endless apron, 8 inches broad, which is made to revolve on two rollers of 1¼ inch diameter, and which is placed in close proximity to the ginning-roller. The cleaning-roller passes the Cotton under another roller (1¼ inch diameter) to the apron, around which it adheres, and by this process the fibre is straightened.

"The apron is cleared, after thirty revolutions, by means of a cam, which is placed over the apron, near the back part of the gin; the edge of this cam is made to come regularly down to the apron by a finger attached to one end of it; a racket-wheel throws this finger under a segment of a circle, attached to the pulley which drives the ginning-roller, and thus holds the cam to the apron during one revolution; the edge of the cam is then brought clear of the apron by weights and the Cotton falls to the floor in a bat.

"The above is the plan of the gin as first exibited. I have since simplified it somewhat by taking off the apron, cam, &c. and substituted 4 rollers in their place—placing them immediately back of the ginning and clearing rollers, through which the Cotton passes and falls in flakes on the floor."—[*Extract of a letter from H. W. Fargo of Savannah, Mr. M'Carthy's agent for Georgia, to the writer.*] The price of a single gin is $150.

NOTE E....*Number of pounds of Sea-Island Cotton exported from the United States.*

Year.	*Lbs.*	*Year.*	*Lbs.*
1805	8,787,659	1824	9,525,722
1806	6,096,082	1825	9,655 278
1807	8,926,011	1826	5,972,852
1808 (Embargo)	949,051	1827	15,140,798
1809 "	8,664,213	1828	11,288,419
1810 "	8,604,078	1829	12,833,307
1811 "	8,029,576	1830	8,147,165
1812..(War)...	4,367 806	1831	8,311,762
1813.. " ...	4,134,849	1832	8,743,373
1814.. " ...	2,520,388	1833	11,142,987
1815	8,449,951	1834	8,085,935
1816	9,900,326	1835	7,752,736
1817	8,101,820	1036	8,544,419
1818	*6,035,700	1837	5,286,971
1819	*11,015,070	1838	9,286,340
1820	*11,718,300	1839	5,107,404
1821	11,344,066	1840	8,779,669
1822	11,250,635	1841	*6,752,130
1823	12,136,688	1842	*8,016,030

* The bags estimated to weigh 330 lbs. each.

NOTE F.

The recognized distinctions of Cotton on the Continent of Europe are as follows:—1. The North American; 2. The West Indian; 3. The South American; 4. The East Indian; 5. The Levantine; 6. The African; 7. The Italian; 8. The Spanish.

The relative value of the above Cottons is as follows:

Sea-Island, Bourbon, Egyptian.

Maragnan, Bahia, and Pernambuco; Motril, from the Kingdom of Grenada; Cayenne, Surinam, Demarara, and Berbice.

Superior West Indian. New-Orleans, Upland Carolina, Georgia, Tennessee, Inferior West Indian.

Levant—European and Asiatic Turkey.

Italian, Madras, Surat, Bengal.

TABLE I....*Import of Cotton Wool into Liverpool, in packages, from the year* 1791 *to* 1823.
[Statistics of Liverpool, page 147.]

In the year	Portugal.	Brazil.	Holland.	Turkey.	America.	Demerara.	West India.	Surinam.	East India.	Ireland.	Total.
1791	34,500		1,950	2,242	64		25,777			3,871	68,404
1792	37,268		651	79	503		27,340			6,423	72,264
1793	6,541			288	111		14,694			3,337	24,971
1794	17,028		380	853	348		17,792			1,621	38,022
1795	21,841		319	32	2,147		29,539			963	54,841
1796	30,721				4,668	1,730	25,110			1,297	63,526
1797	28,314				5,193	3,073	19,006			2,672	58,258
1798	29,095				12,163	5,506	21,612	110		147	69,634
1799	25,362				13,236	8,102	38,394			1,690	86,784
1800	19,947				24,138	10,976	32,362	2,804		2,353	92,580
1801	25,003				32,621	8,831	28,437	2,216		1,644	98,752
1802	47,300		295	40	55,749	8,757	21,814	836		391	135,182
1803	49,916		307		70,579	2,567	14,651			2,107	140,127
1804	35,697				78,324	24,522	13,788	225		690	153,246
1805	39,416				101,045	16,426	17,286	3,082		1,429	178,684
1806	35,293				100,273	17,338	18,383	1,445		540	173,278
1807	11,852				143,756	21,092	18,956	1,331		359	197,346
1808	3,032	3,540		527	25,426	16,329	15,178			2,183	66 215
1809	86,880	412		3,713	130,581	15,998	25,687			4,015	267,283
1810	11,500	61,724		1,199	199,220	22,258	18,300	1,219		5,182	320,600
1811	698	45,485		342	97,626	19,798	6,927	734		1,182	172,792
1812	1,639	61,037	582		79,528	18,704	7,904	541		1,839	171,774
1813		88,113	409		18,640	14,310	12,223	1,253		6,334	141,282
1814		103,248	136		40,448	15,512	17,341	1,599		4,439	182,721
1815		68,952			160,128	18,401	11,712	1,222	1,484	1,608	270,984
1816		93,730	21		142,120	20,361	8,371	542	10,414	439	276,525
1817		100,259			164,152	13,563	12,518		23,689		314,181
1818		139,247			173,000	14,410	12,612		86,126		425,395
1819		131,701			175,545	9,865	7,038		62,037		366,186
1820		161,628			272,574	10,262	6,561		7,668		458,693
1821		114,951			271,649	9,553	13,149		3,849		413,151
1822		135,682			291,293	14,640	10,123		2,165		453,903
1823		138,759	903		410,782	8,962	11,212		7,929		578,547

Imports selected from other sources from 1824 *to* 1843.

In the year	Portugal.	Brazil.	Holland.	U. S. America	Demerara.	West Indies	East Indies.	Ireland.	Surinam.	Egypt, Lev'nt	Total.
1824											
1825											
1826		53,128		369,337		11,810	13,914			39,343	487,532
1827		145,704		592,163		20,485	13,656			13,955	755,963
1828		162,465		414,248		13,375	16,645			24,667	631,400
1829		157,329		429,640		14,663	16,587			22,458	640,677
1830		189,754		571,848		7,289	14,087			11,062	794,040
1831		164,344		560,389		7,947	33,601			27,089	793,370
1832		111,607		584,006		6,342	45,007			32,470	779,432
1833		162,414		619,987		10,034	49,256			2,169	843,860
1834		100,372		670,755		15,218	46,384			6,155	838,884
1835		142,312		707,317		21,277	63,409			35,699	970,014
1836		147,268		712,343		29,528	102,801			31,682	1,023,682
1837		113,121		786,907		25,925	74,650			35,700	1,036,303
1838		137 303		1,073,007		28,317	64,427			28,033	1,331,097
1839		97,033		782,861		30,123	74,640			30,520	1,015,177
1840		82,664		1,066,413		20,153	109,053			36,815	1,416,098
1841		89,534		844,601		27,300	162,500			38,014	1,161,949
1842		85,560		965,040		16,720	169,690			18,000	1,255,010
1843		98,586		1,287,013		15,071	110,869			46,150	1,557,712

TABLE II....*Account of the Imports of Cotton Wool into Great Britain, from* 1781 *to* 1843, *inclusive.*

Year.	*Lbs.*	*Year.*	*Lbs.*	*Year.*	*Lbs.*	*Year.*	*Lbs.*
1781	5,198,778	1797	23,354,371	1813	51,000,000	1829	221,800,000
1782	11,828,039	1798	31,880,641	1814	60,100,000	1830	261,200,000
1783	9,735,663	1799	43,379,278	1815	99,300,000	1831	280,500,000
1784	11,482,083	1800	56,010,732	1816	93,900,000	1832	287,800,000
1785	18,400,384	1801	56,004,305	1817	124,200,000	1833	304,200,000
1786	19,475,020	1802	60,345,600	1818	177,300,000	1834	320,600,000
1787	23,250,268	1803	53,812,284	1819	149,700,000	1835	361,700,000
1788	20,467,436	1804	61,867,329	1820	143,900,000	1836	410,800,000
1789	32,596,023	1805	59,682,406	1821	129,000,000	1837	408,200,000
1790	31,447,605	1806	58,176,283	1822	142,200,000	1838	501,400,000
1791	28,706,675	1807	74,925,306	1823	188,100,000	1839	388,600,000
1792	34,907,497	1808	43,605,982	1824	143,700,000	1840	583,400,000
1793	19,040,929	1809	92,812,282	1825	222,400,000	1841	489,900,000
1794	24,358,567	1810	132,488,935	1826	171,500,000	1842	528,500,000
1795	26,401,340	1811	91,576,535	1827	271,100,000	1843	667,000,000
1796	32,126,357	1812	63,000,000	1828	218,800,000		

(598)

TABLE III....*Statement of the Imports of Cotton Wool into Great Britain, from* 1806 *to* 1843 *inclusive.*

Import.	1806	1807.	1808	1809.	1810.	1811.	1812.	1813.	1814	1815	1816.	1817.	1818.	1819	1820.	1821.	1822.	1823.	1824.
Amer ..	124,939	171,267	37,672	160,180	246,759	128,192	95,331	37,720	48,853	203,051	166,077	199,669	207,580	205,161	302,395	300,070	329,906	452,538	282,371
Brazil...							98,704	137,168	150,930	91,055	123,450	114,518	162,499	125,415	180,086	121,035	143,505	144,611	143,310
E. India	136,799	111,400	130,466	280,202	314,414	198,039	2,607	1,429	13,048	22,357	30,670	120,202	247,659	184,259	57,923	30,095	19,263	38,393	50,852
Egyp.&c																		5,623	38,022
W. India							64,563	73,219	74,800	52,840	49,235	44,872	50,991	31,300	31,247	40,428	40,770	27,632	25,537
Total bls	261,738	282,667	168,138	440,382	561,173	326,231	261,205	249,536	287,631	369,303	369,432	479,261	668,729	546,135	571,651	491,678	533,444	668,797	540,092

Import.	1825.	1826.	1827.	1828.	1829.	1830	1831.	1832.	1833.	1834.	1835.	1836.	1837	1838.	1839	1840.	1841.	1842.	1843.
Amer...	423,446	395,852	646,776	444,390	463,076	628,527	608,887	628,766	654,786	733,528	763,199	764,707	844,812	1,124,800	815,590	1,236,313	902,541	1,018,960	1,397,351
Brazil...	193,942	55,590	120,111	167,362	159,536	191,468	168,288	114,585	163,193	103,646	143,572	148,715	117,005	137,500	99,320	84,891	89,994	85,660	98,715
E. India	60,484	64,699	73,738	84,855	80,489	35,019	76,764	109,298	94,698	89,098	117,965	219,493	145,174	107,200	132,830	216,651	275,770	254,770	181,992
Egyp.&c	111,023	47,621	22,450	32,889	24,739	14,752	38,124	41,183	3,893	7,277	43,721	34,953	41,193	29,700	31,640	36,722	39,304	18,000	46,506
W. India	31,988	18,188	30,988	20,056	18,867	11,721	11,304	8,490	13,646	17,485	22,796	33,506	27,791	29,400	37,000	25,831	34,050	20,740	19,583
Total bls	820,883	581,950	894,063	749,552	746,707	871,487	903,367	902,322	930,216	951,034	1,091,253	1,201,374	1,175,975	1,428,600	1,096,280	1,600,426	1,341,659	1,398,120	1,644,147

The imports from1812 to 1838, inclusive, are extracted from William Kelly & Co.'s statement; from 1839 to 1842, inclusive, from the "Annual Statement of Imports and Stocks of General Produce," published in Liverpool, December 31st, 1842.

Liverpool Prices Current, 31*st December of each year.*

[From William Kelly & Co.'s Statement, published at Glasgow.]

Descrip.	1806.	1807.	1808.	1809.	1810.	1811.	1812.	1813.	1814.	1815.	1816	1817.	1818.	1819.	1820.	1821.	1822.	1823.	1824.
	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.
Sea-Isl'd							33 @39	40 @48	42 @57	26½ @34	25½ @30	28 @36	33 @48	26 @36	17½ @28	14½ @28	14½ @24	13 @22	17 @27
Orleans							22½ 25½	29 31	27 28	16 21	18 22½	20 24	16½ 21	12½ 17	8½ 14	8½ 12½	7 11	8 11½	9 12
Upland .	15 @21½	15½ @19	15½ @36	14 @34	14½ @22½	12½ @16	21½ 23	27 29	22¾ 24	14½ 18	17½ 20½	19 22½	17 19¾	12½ 13¾	8 10½	7¾ 11	6½ 8½	7½ 9¾	9 10½
Egypt'n																		10 11	10¾ 11½
Pernam.							26½ 27	33 33½	31 31½	27 27½	22¾ 24¼	24½ 25	22 23½	16¾ 17¾	11½ 13	11½ 12½	10½ 11½	11 12	11¾ 13
Maranh.							25½	31½	28¾ 29	24 24½	22 23	23½ 24	20 20½	15¾ 16	11¼ 12	11 11½	9½ 10¼	10½ 11	10½ 11¾
Demera							23 27	27 33	26 29½	21 25½	19½ 23½	21 24½	19 24	14 18	11 14	9½ 13	8½ 11½	10 12	10 13
W. India							21 22	27½ 28½	24 26	20 22	18 19½	20 22	17 18½	12 13½	10 11½	8 9½	7½ 8½	8 9	8 9
Surat...							13 16	17 20	17 20	14 17½	14½ 17	15½ 19½	8 14½	7½ 12	6¾ 9½	6½ 8½	5½ 7¼	6 7½	5¾ 8

Descrip.	1825.	1826.	1827.	1828.	1829.	1830.	1831.	1832.	1833.	1834.	1835.	1836.	1837.	1838.	1839.	1840.	1841.	1842.	1843.
	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence.	Pence
Sea-Isl'd	20 @27	10 @20	11½ @18	12 @20	11½ @21	11½ @20	9½ @18	10⅜ @18	13½ @20	18 @20	14½ @30	18 @36	14 @30	15 @33	18 @34	13½ @30	10 @24	8 @20	10½ @20
Orleans	8 12	7 9	5½ 8¾	6 9	5⅞ 8	6½ 8	5 8	6½ 9	7½ 11	8½ 12	6⅞ 12	7½ 13	6¾ 9½	6¾ 10	6 8	5½ 7¾	4¾ 7½	4½ 7½	4¾ 7
Upland .	6½ 9½	6¾ 7½	4⅞ 7	5¾ 7	5⅜ 7	5⅞ 7⅞	4⅞ 7	6⅜ 7⅞	7½ 9½	8¾ 10½	7 10½	7½ 11	6¾ 9	6¾ 9½	6 7⅞	5½ 6¾	4¾ 6½	4½ 6	4½ 5¾
Egypt'n	9½ 11	7½ 8½	7 8½	7 8½	6½ 8½	8 9½	7⅜ 8¾	8½ 9½	12 12½	15½ 16½	11¼ 14	11½ 16½	9 13	11¼ 16½	10½ 12½	9½ 12	7 10	6 7½	6 8
Pernam.	11½ 12½	10 11	8½ 9½	7⅞ 8½	7½ 8	7⅞ 8¾	7 9	8¾ 9⅞	9⅝ 11	12½ 14	10 13	10½ 13	9½ 11	8¾ 10	9 10½	8½ 9	7 8½	6½ 7½	5¾ 6½
Maranh.	10⅜ 11½	8¾ 9¾	7½ 8½	7½ 7⅞	6⅜ 7	7 7⅞	6 7½	7⅜ 9½	8¾ 10½	11⅞ 13	10 12	9¾ 13	8½ 10	8 9¾	8 9¾	7½ 8½	6½ 7½	5½ 6½	5½ 6½
Demera.	10 12½	8 11	6¾ 9½	6¾ 9	5½ 8	6½ 9	6 9½	7½ 10½	8 11	11 15	10 14	10 14	8 13	8 13	9½ 11½	7½ 11	6½ 9½	6 8½	
W. India	8 9½	6½ 7½	6 7	6 7	5½ 6½	6 7	5½ 6½	6½ 8½	7 8¾	7¾ 11	9 10½	7 10⅜			8 9	6 8	5½ 6¾	5 6½	4½ 5¾
Surat...	5½ 7	5 6½	3⅞ 5½	3½ 5	3 5½	4½ 5¾	3½ 4¾	4½ 6	5½ 7½	6½ 8	6 8	3⅝ 7½	4½ 6½	5 6½	4½ 6	4 5½	3½ 4¾	3½ 4½	3¾ 4½

Extreme Prices of Upland Cotton in the market of Charleston.

Year.	Cents.	Year.	Cents.	Year.	Cents.	Year.	Cents.
1806	17 @23	1813	21 @30	1820	15 @20	1826	8 @14½
1807	16 22	1814	23 37	1821	14 18	1827	8 11
1808	10 14	1815	20 28	1822	11¼ 18½	1828	8 11½
1809	12 14	1816	23 32	1823	11½ 17	1829	7 10
1810	12 19	1817	25½ 35	1824	14 16½	1830	7½ 12½
1811	7 16	1818	25 35	1825	13½ 32	1831	6½ 10¾
1812	8 10	1819	15 27				

TABLE IV....*East India Cotton imported into Europe from* 1832 *to* 1842, *inclusive.*

Year.	Bales.	Year.	Bales.	Year.	Bales.	Year.	Bales.
1832	149,285	1835	119,591	1838	111,314	1841	271,000
1833	100,878	1836	220,067	1839	137,581	1842	264,000
1834	93,921	1837	142,326	1840	226,000	1843	

South American Cotton imported into Europe from 1832 *to* 1842, *inclusive..*

Year.	Bales.	Year.	Bales.	Year.	Bales	Year.	Bales.
1832	137,061	1835	179,043	1838	155,664	1841	99,000
1833	194,859	1836	185,154	1839	126,056	1842	103,000
1834	128,289	1837	138,697	1840	90,000	1843	

Egyptian Cotton imported into Europe from 1832 *to* 1842, *inclusive.*

Year.	Bales.	Year.	Bales.	Year.	Bales.	Year.	Bales.
1832	160,465	1835	140,956	1838	162,242	1841	123,000
1833	110,976	1836	180,301	1839	117,176	1842	108,000
1834	70,068	1837	158,400	1840	96,000	1843	

West India Cotton imported into Europe from 1822 *to* 1843, *inclusive.*

Year.	Bales.	Year.	Bales	Year.	Bales	Year.	Bales.
1832	29,348	1835	59,297	1838	63,927	1841	75,000
1833	37,762	1836	87,450	1839	90,577	1842	70,000
1834	39,945	1837	79,874	1840	61,000	1843	

Imports of Cotton into France from 1822 *to* 1843, *both inclusive.*

Year.	Bales	Year.	Bales.	Year.	Bales	Year.	Bales.
1822	205,861	1828	206,132	1834	274,307	1839	342,100
1823	169,845	1829	242,230	1835	324,425	1840	466,318
1824	251,074	1830	282,752	1836	199,823	1841	458,851
1825	204,572	1831	218,393	1837	343,963	1842	442,470
1826	320,174	1832	269,159	1838	390,978	1843	399,165
1827	290,617	1833	305,633				

TABLE V....*Growth and Consumption of Cotton in the United States of America.*

	Growth. Bales.	Consumption. Bales.		Growth. Bales.	Consumption. Bales.
1826–27	937,000*	103,483	1835–36	1,360,725	236,733
1827–28	712,000	120,593	1836–37	1,422,930	222,540
1828–29	857,744	118,853	1837–38	1,801,497	246,063
1829–30	976,845	126,512	1838–39	1,360,532	276,018
1830–31	1,038,848	182,142	1839–40	2,177,835	295,193
1831–32	987,477	173,800	1840–41	1,634,945	297,288
1832–33	1,070,438	194,412	1841–42	1,683,574	267,850
1833–34	1,205,394	196,413	1842–43	2,379,460	325,714
1834–35	1,254,328	216,888			

* The estimate of the quantity taken for consumption does not include any Cotton manufactured in the States south and west of Virginia, nor any in that State, except in the vicinity of Petersburg and Richmond.

Growth of	1829–30.	1830–31.	1831–32.	1832–33.	1833–34.	1834–35.	1835–36.	1836–37.	1837–38.	1838–39.
New-Orleans	354,024	426,485	322,635	403,440	454,719	511,146	474,747	593,259	711,581	568,562
Natchez* ...							6,889	7,755	19,675	16,432
Florida.....	5,787	13,073	22,651	23,640	36,738	52,085	79,762	83,703	106,171	75,177
Alabama...	102,684	113,186	125,921	129,370	149,978	197,692	236,715	232,243	309,807	251,742
Georgia	253,117	230,502	276,437	271,020	258,655	222,670	270,121	262,971	304,210	205,112
S. Carolina .	188,871	185,166	173,872	181,880	227,359	203,166	231,237	196,377	294,334	210,171
N Carolina .	36,862	36,540	28,461	61,090	33,220	34,399	32,057	18,004	23,719	11,136
Virginia	35,500	33,895	37,500		44,725	33,170	29,197	28,618	32,000	22,200

* Included in the Exports from New-Orleans.

Stooling of Wheat.—Colonel North having had given him, two years since, some few grains of wheat, taken from an Egyptian Mummy, and supposed to be two thousand years old, placed it in the hands of Mr. Innes, his steward and head gardener at Roxton. Mr. Innes raised a small quantity, and this season planted the produce on about a third of a chain of ground, within the enclosure of the gardens, in rows at 18 inches apart, every grain being deposited singly at the distance of 9 inches from each other. On examination of the crop, it is found that from every grain has sprung upwards of 40 stems, every stem bearing an ear; on two stools taken at random, the number of stalks were 43 and 46. This great stooling of wheat is not a peculiarity of this Mummy wheat; it is known that the common English wheats, if cultivated with care on rich soils, and sown thin, will do the same: at King Sutton, this season, on land in the occupation of Mr. Colegrove, a small quantity of wheat being sown with tares, and the crop allowed to ripen, as many as fifty stems have been counted. [Banbury Guardian.

WOOL-GROWING AT THE SOUTH.

BY WILLIAM DARBY.

WASHINGTON, Oct. 20th, 1845.

TO JOHN S. SKINNER, Esq:

Dear Sir—With no slight degree of pleasure, I received No. IV, (October, 1845,) of your "Farmers' Library," so too narrowly named. Such a work suits, more or less, all classes of society, and none more, if as much, as the legislator. Those who have to watch over and conserve the interests of all, ought to know the relative value, and what measures to adopt in order to give due legal and political attention to every separate interest. Your monthly Magazine, for such it is, has one inherent feature, which, to answer the great purposes I have stated, gives to it an inestimable value; that is, its being a common centre, where the experimental fruits of the highest minds are collected for universal use.

Your last number contains, with much other very interesting matter, two articles which may serve as texts to far more extended and developed views. These are, Whitemarsh B. Seabrook on the Cotton Plant; and the other, "A Review of the Past, Present, and Future State of the Wool Market."

Nothing can be more idle than disquisitions on the morality of extending the Domain of the United States over the wide, and by *man*, the almost unoccupied regions of Central North America. In all stages and aggregations of our species, from the Farm to the Empire, landed property is the sure inheritance of Industry, Energy and Frugality. This Law of Nature may, like all Laws, be opposed, but it is not to be repealed. It is now not much under half a century since I regarded the great central zone of North America as the sure inheritance of the Anglo-American. Time and circumstance have, and are, annually in combination, fulfilling and demonstrating the irresistible force of this law; but public knowledge of the consequences is very far from keeping pace with the reality of things.

Assuming therefore, what I have stated, as the inevitable destiny of the zone of North America, between N. Lat. 26° and 50°, if no farther south or north; then if so limited, the Anglo-American will spread over and possess on an area, not varying much from an equality, with all Europe, the regions of the earth best adapted to the production of the two species of Wool, the Animal and the Vegetable. From the Atlantic Ocean, as far westward as the experiments have been made, cotton of various textures, and on all soils admitting the growth of Indian corn, and as far north as 36°, can be abundantly produced. As the summers are longer, and winters shorter and milder, on the Pacific than on the Atlantic side of the continent, cotton no doubt can be produced on the West side many degrees farther north than on that of the east.

As to animal wool, its production admits, perhaps no limit, but Oceanic or some other water border, and millions on millions of acres of land, now regarded as waste, will be in less than another half century covered with flocks of the wool-bearing animals. This is not to me a new subject of thought, as in the Prairie section of Louisiana, more than forty years past, I have heard men of sense express their conviction of how admirably these grassy plains were adapted to the sheep. As soon as I can command time, I intend to forward for the 'Library,' a statistical article on the subjects merely glanced at at present.

Very sincerely, yours,
WILLIAM DARBY.

SAVE THE LEAVES.—At this season a great quantity of leaves may be readily gathered in many places. A rake used at the right time will gather them very fast by the sides of buildings and fences. They make excellent beds for cattle to lie on, and they are more valuable after such use than before. Rake all clean as soon as harvesting is over, and you will much increase your manure heaps.

As soon as the summer manure is scraped out of the cow-yard, leaves, litter, loam, sand, gravel, or peat mud may be spread over the yard. It costs less to do this than to buy guano or poudrette, and it will prove more useful, for you will be able to improve the texture of your soil if you exercise good judgment in choosing your materials.

Your gravelly manure will suit best your lowest or coldest grounds. Your sandy loads will do best on clayey soils. Your peat manure works quickest and best, on your gravelly knolls and sandy fields. It is quite important to consider well the use you are to make of your manures at the time when you are gathering the materials to increase your heaps; for in this way you alter gradually the very texture of your soil. You can render it more light and porous, or more compact and retentive of moisture. You can warm it, or cool it by means of the materials that you gather to be impregnated by the excrements of animals.

ON BREEDING HORSES....VALUE OF THE BRED HORSE.

BY A MAN OF EXPERIENCE.

October 20th, 1845.

J. S. Skinner, Esq.

Dear Sir:—Absence from home, and pressing business, have for some time prevented me from making a few crude remarks on your "Dissertation on Horse Breeding, and on the Trotting Horse of the United States," in the August number of the Farmers' Library; considering it decidedly the best article on that subject I have ever read, condensing much valuable information, drawn from the experience of the past; not only to the amateur of horses, but to breeders, a fund of information, which may correct many errors, and be a guide and valuable "text book" to refer to in judiciously breeding a most useful and profitable stock. Your Dissertation should be read over and over, and carefully reflected on, as it is well calculated to do away deep-rooted prejudices against Blood Horses, showing most conclusively that judicious crossing from them has in times past, and must for all time to come, continue to be the most profitable to the Breeders of that noble animal. And here let me remark that your "Library," so well calculated to disseminate useful knowledge to the Agriculturist and Breeders of Stock, should be extensively patronized, and found in every Family Library. Having for 30 years past had some experience in breeding of horses of various crosses, from the Blood Horse down to the "Norman or French," experience has taught me the value of the trite saying, "that nothing but the thorough-bred does it quite well." I admit, however, that about three-fourth bred answers for most purposes for the road, the farm, &c.; and in endeavoring to appreciate his great value to our common country, for a variety of purposes, not only for individual comfort, in conveying us where "steamboats and railroads cannot and will not take us;" also on our farms in Agricultural pursuits, the healthy and enlivening scenes of the chase—the course—and not least, in a national point of view, for Cavalry use, it is not easy to overrate their value; for an *army* with a weak or inefficient *Cavalry*, is like a "body without a soul." That Blood will *tell*, is just as sure as two and two make four: and here, Mr. Editor, let me remind you of an incident of the "Battle of Waterloo," where Bonaparte, in making his last tremendous struggle to retain the *Crown* of *France*, experienced and ruinously felt the great superiority of Blood Horses, on which the English Cavalry were mounted. The battle raged, and victory, doubtful, seemed suspended between the two great contending *armies*; at this critical moment, the English (Cavalry mounted on high bred horses,) made their destructive charge, which resulted in the complete overthrow of the French, man and horse, the flower of his army; and the victors of an hundred battles were seen rolling in the dust, literally rode down. "Bonaparte at a small distance, on an eminence with his spy-glass, seeing the flower of his army, hitherto victorious, in agony exclaimed, 'See those horsemen, *those terrible horses!*'" Mark the expression, "*those terrible horses!*" And what was the lesson learned on this memorable occasion? Did not the "Allied Powers," France, Russia, Prussia, Austria, German States, Belgium, &c. &c. seeing the vast superiority of the bred horse, immediately establish Breeding-Studs, in a national point of view; and have been purchasing, at very great prices, from year to year, of England, where the Blood Horse has been kept pure for centuries past; to them a strong arm of defence, of wealth and of pleasure? And shall the people of the United States close their eyes to all the lights and evidence afforded by the experience of the past in the improvement of the breed of horses! Continue to breed from cold-blooded horses, and add to the number of thousands of worthless, impure, and basely adulterated horses, of no distinctive breed—"it is unwise and unprofitable."

In your remarks on Trotting Horses, several important queries to my mind are well established—1st. That generally a great performer has high strains, and traces directly to the "Blood Horse;" and here let me ask, where can we go for speed, bottom, and long continued endurance, but to the Blood Horse? "and echo answers, Where?" The great secret in breeding, is judicious crossing; which should be three-fourth bred from strong, powerful thorough-breds, like old Messenger or some of his valuable descendants, for roadsters, which can measure off their ten miles per hour; this I consider among the most valuable for common purposes; and my word for it, the trotting gentry will select more flyers from this than any other cross. Deliver me from the cross of the "*French*" or Canadian, or Norman breed; I have tried them to my sorrow and disadvantage, and promise to do so no

more. I admit that crossing the Blood Horse on the French mares, will improve the French, but detracts and deteriorates in the same ratio from pure blood; such at least, has been my experience: And he who attempts to breed trotters by crossing their mares with French or half French studs, even if from long training, they have been made to trot their mile in three minutes, as all their hand-bills will attest, will find in "nineteen cases out of twenty," it will prove a total failure, for this clear reason—they are of no distinctive breed. 2d. That a trotting horse, to excel, must do nothing but trot; and his size, as appears from your statement, from 15 to 16 hands high, have excelled; and last, and not least, it is superior skill, and long continued training and driving for years, that makes the trotting horse, when crossed with high strains of blood, altogether superior in the United States.

Would not breeders, therefore, do well to examine carefully into this important subject, discard long established prejudices, and adopt that course of breeding, which shall not only prove the most useful and profitable, but also, as we journey along through life, have the satisfaction of endeavoring to do some little good for our common country.

Yours, most respectfully, L.

THE PENNIMAN GRASS.

From the north side of Cuba—good for soiling, for pasturage, and for hay.

We have not now to suggest for the first time, but now earnestly repeat the intimation, that the *name* of the person bringing to or importing for his country, a new grass, grain, animal, vegetable, tree—either fruit or ornamental—ought to be given to the thing thus added to the list of things calculated to enrich or embellish the land. Hence we baptize the Grass, the seed of which was received with the following letter, the *Penniman Grass*. The quantity was small, and has all been distributed.

New-York, Oct. 25, 1845.

Dear Sir:—I hand you with this, a small parcel of grass seed, sown on the north side of the Island of Cuba. My brother, who resided for some time on the Island, noticed the great length to which the grass grew; (of which the seed herewith is the product,) being upwards of six feet in length; upon inquiry, respecting it, he found it afforded an excellent feed as grass to the cattle, and made the best of hay when cured—growing thick, and heading out like the best of English grass with us. Thinking it might do well in our climate and soil, he was induced to gather a quantity of the seed, which he has disposed of in the New-England States, save the small parcel I now hand you.

I have seen some of this grass, which my brother brought home with him, measuring in length upwards of seven feet; every joint quite as tender, cured, as our best English hay. You will be struck with the length of this seed, bearing as it does, a proportion to the length of grass it produces. Be pleased to present the package to some of your farming friends. Perhaps it may be the means of adding a joint or two more to the fine grasses of America; if so, I shall be truly glad, for "behold how large a stalk this little seed bringeth forth."

Yours, respectfully,
BENJ. F. PENNIMAN.
No. 89 Broad-street.

To Mr. Skinner, Editor of the Farmers' Library.

REFLECTIONS ON AGRICULTURAL PROGRESS.

Oswego, Nov. 1, 1845.

Dear Sir: Having been among the first to have the "Farmers' Library" introduced here, I applied to one of our best agents, by whom I have been supplied with all of the numbers, and am thoroughly convinced of its merits and utility.

It is but a few short years since I saw, not many miles from your City, farmers allowing nearly all of their manure to go to waste: what little was gathered not being of much profit, for it had been reduced by the action of the air for a year or so before using; together with the advantage of descending ground in many places so as to have a dry yard, &c.; but not only manuring but the idea of deep plowing was wholly objected to. Some argued that it injured the soil and that nothing would grow upon it for a length of time afterwards. Others thought the orchard must not be trimmed and a reason for that was given thus: Some seasons there were blighting winds, and if the trees were deprived of many branches the winds would destroy all the fruit and so a thick, branchy tree would be better protected against the elements, and produce fruit from the middle and protected parts. But after all few of those trees are to be seen and little or none of the fruit is found in our markets.

It is gratifying to see now, on the same farms, the fine grafted trees with splendid fruit taking the place of the natural and uncultivated, while the plow is doing wonders, not spoiling the land, as was once thought, by going too deep, but actually renovating worn-out lands. What a contrast in opinion, producing changes in almost every thing!

Now in many of those same farms that the occupants worked in the old and more than slovenly way, you may see the manure taken care of the tillage altogether different, and I will venture to say that more is produced, of a better quality and on less land, with less labor,

than formerly; but still there is room for improvement. It is said that, as a nation, our march is onward; and if so let us march on rejoicing and improving, for nothing seemed to need improvement more than our social and agricultural systems. The main root of the evil has lain in the false notion that labor was not honorable, and therefore men of science have stood back or pursued what are most commonly called learned professions, which the world is too full of. But now, thanks to the men of eminence who have turned to the Plow, it truly is the right way to make labor honorable:—and I may now ask why labor was ever considered otherwise than the most honorable way for man to live, as our very natures demand the labor of our hands for our health, as well as for sustenance. Let us all scout the idea of labor being dishonorable, and our poor-houses and prisons will soon be vacant. As we are creatures of imitation it is but natural that we should follow our leaders; it is so in religion and politics, and why not in our social and agricultural affairs?—Many of the farmers here are behind the times too much. Land is merely run over, not cultivated, and lean crops and loss of labor are the consequences. Now, nothing seems more likely to bring about the right system than free discussion, and as the "Farmers' Library" is filled with the right sort, let it pass round.—When I was a lad an old gardener gave me this advice, which I have ever found true: If I would raise long parsnips, I must dig the ground deep and manure well!

Yours truly, in pursuit of more light,
JOHN S. SKINNER, Esq. L. D.

EDUCATION IN VIRGINIA.

REMARKS ON EDUCATION INTENDED FOR GENERAL APPLICATION.

No sign in the moral and political horoscope has given us so much pleasure, as the apparent determination, in Virginia to apply the powers of the government, and the resources of that glorious old commonwealth, to the *better and more general education of the people.* True, no State can boast more brilliant orators. She possesses a great number of well educated men. Mental indolence is not the characteristic of a Virginia gentleman; but they have given their minds too much to *party* conflicts. For the political arena she carries cocks under both arms, ready trained and healed for the pit, let that be opened where it may, with champions to give them a wing whenever they are cut down.—She will stickle for "the ninth part of a hair," on the subject of State rights, and gallantly fight for Texas or for Oregon; but in population, in internal improvements, in agricultural wealth; and in political power, incident to these, what progress has she made? where does she stand? Steam, which in so many places does the work of millions of men, and creates millions of wealth,—to what account is she turning it?—Does it spin her wool, or grind her grain, or lift her coal, or forge her iron, or "whirl the rapid car" over her mountains or into her mountain valleys to bring her internal resources—so various—so inexhaustible, into available markets?

And do not these views raise the question whether the public mind does not need to be turned in some *more useful direction?* whether the system of education is not defective, either in its nature or in being too much restricted, or both? For her warmest friends, and we claim to be of that category, it is consoling however to know—(can we venture to say *know*, or must we say *hope*) that her strong men of all parties, are manifesting a determination to look with one heart and one feeling into her condition and resources—physical and mental—and to pass the *probe to the bottom* of the evils that have retarded her growth, and held her back in the race of power and of glory? For if glory is to be predicated of States, in what does it consist? Is it not in general and efficient intellectual culture—in sagacity and resolution to make the most of its resources,—in hospitality and the love of liberty and justice! What right minded, well instructed citizen does not feel ambitious to maintain the rights and fair fame of his *own State,* next after that of his own family?—Who has the heart and the just pride of a man that would not blush at being born the inheritor of the dishonor that is the portion of any State steeped in ignorance, neglectful of its natural advantages, lagging in the rear of *all* its cotemporaries in all that gives respectability, power and security to States and nations? and above all, but we will not name it in connection with Virginia—we were going to say *stained with repudiation*! No community that ever existed has been more jealous of its honor—

more observant of its faith than she—and if ever men existed, with talents capable of descerning and obviating what may have been improvident or short-sighted or paralyzing in her legislative policy, such men are the sons of the old Dominion. Any calm observer beyond her borders may see that her strong men are now beginning to think, and to come together for her intellectual and physical improvement. It is not now a mere play of the zephyr on the surface of the waters. It is not the momentary agitation of a stagnant pool by a gust of wind —no let us hope that living springs are boiling up from the bottom, that will vivify and purify and give activity to the mass and secure a perennial flow of wholesome waters that will irrigate and fructify the whole commonwealth. Yes, and pray God for a wholesome direction to the public mind—for with such men and with such interests at stake, "*where there is a will there is a way*,"—we trust in heaven that the result will tend to give its proper preponderance to the agricultural interest in the future councils and legislative action of the State. That the sons of the soil may be educated, not as *partisan politicians* and demagogues of an hour, but as men capable of understanding and ready to maintain her *landed interest*. Let those to whom the work of projecting a system of general education is entrusted, procure at once and and read the several Reports of the Superintendents of the Common Schools in New-York and other States. "The Common School System, by S. S. RANDALL," and the several Reports, the last being the *eighth*, of the Board of Education of the State of Massachusetts—and tho' last by no means the least, let them procure the Educational Journal conducted by the Secretary of the Board. "As a repository of the Reports of the Board and of the Secretary and as a vehicle for the communication and dissemination of the views of *practical* teachers, in reference to modes of instruction, it is an invaluable work for persons employed in teaching, and should be in the hands of every one who wishes well to the physical the moral and the intellectual education of his family."

It has been and will continue to be a matter of heartfelt solicitude with the editor of the FARMERS' LIBRARY, to make it such a work as *ought to be in the hands of every young man, and in the library of every country school in the United States*; and we feel authorized to say that School Libraries will be furnished with copies at the wholesale price.

We should never tire of writing on this subject as long as we could hope to assist in achievement of the great object—universal *practical* instruction—but pressed now for time and space, we adopt for the expression of what we would say in conclusion, the following extract from thg last number of the Quarterly Journal of Agriculture.

Again, a more thorough education for those who till the ground, than has hitherto been contemplated, seems especially demanded, to enable them to avail themselves of the discoveries of modern science. This, however, is a position which many are now ready to take, although its importance cannot be so well appreciated by those who are placed upon the very rich soils of our country; but those who are tilling soils already exhausted of their natural fertility, see the necessity, and would see it still better, if they could not sell or exchange their farms for the new and exuberantly rich lands of the west.

Leaving this point as it is, we remark once more, that the times and the circumstances of our country require more than ever the cultivation of the minds of this great class of the citizens of our Republic. It was safe in the morning of our country, when oppression taught our fathers the value and the price of liberty, for the husbandman and mechanic to commit most of the duties incident to office to those who were by their profession allied to a public life. But now in this age, it appears to us, that to the owners and cultivators of the soil should more especially be committed this trust, as they have a paramount interest in the affairs of the State and nation. They who are withdrawn from the sinister influences of a dense city population, where the unworthy and the demagogues of the land are wont to congregate,* should now stand up in the halls of legislation and justice, and at least possess themselves of that power to which their numbers entitle them. Some may sneer at the expression, but to us it is plain, that, to the cultivators of the soil is committed the destinies of this country; that to them more especially is committed the great duty of handing down, unimpaired, our institutions to posterity. If this is true, it follows that the intellectual faculties should receive that share of culture which is contended for in this our essay.

We would not by any means be understood, in these remarks, to say that farmers are to become politicians, in the odious sense of the phrase. We mean only that they should understand as much of history, of law and of legislation, and of rights as they are defined in our constitution, as shall enable them to stand up by the side of our professional men, and to encounter successfully the demagogues and party hacks which in these days seem to swarm and multiply out of all proportion to the rest of society.—Who, of all our citizens, are so well prepared to act dispassionately and rightly, as those who

* [Demagogues are not the peculiar growth of cities—as the vermin that feed on the beggar are bred in his own filth, so demagogues are the growth of the *ignorance* of communities, who hatch out and support them—sound and widely diffused education will extirpate them, as clear culture extirpates loathsome weeds. "Dense city populations" have their advantages as well as disadvantages. It is in them that sharper conflicts of the mind, and easier communication of and access to all modern discoveries strike out new ones. They are, too, the Emporiums of Commerce, the great promoter of discovery and civilization. No nation can reach to great elevation in power and glory and liberty and security as long as it is *politically*, priest ridden. *Ed. Farm. Lib.*]

are located at a distance from the hot-beds of party spirit in our cities, and upon a microscopic scale in our villages; as those who quietly plow their fields and gather their harvests?—But ignorant men are not fit for responsible posts: it is not the mere tiller of the soil, the untutored laborer, but it is the enlightened workman, the educated farmer, to whom we would commit our great interests; to the plain and unsophisticated but not uninstructed, sons of the soil, unskilled it may be in intrigue, but who, when they march up to duty, when they exercise their own personal rights, or act on behalf of their fellow citizens by a delegated power, do it without fear, though frowned upon by the scheming partisan and the ambitious office-seeker.

To conclude, we declare that we care not how many institutions are founded, by what name they may be known, or when or by whom our young men are educated, *provided it is done;* but let not our farmers deceive themselves by founding institutions whose objects are partial and narrow, and which leave out of view those courses of study which are necessary to fit the pupil for the discharge of the duties of a citizen of this republic.

POTATO STARCH....HOW PREPARED.

EVERYTHING is interesting which relates to the culture, uses and economy of a root on which so much labor is bestowed over so wide a range of the civilized world, and which, far beyond all others, forms an element of human subsistence. So great has been the dependence upon it that well-founded alarm exists in Europe, lest the failure of the crop this year may produce a famine; and our bread-stuffs already begin to show the effect of the *Potato Murrain* there. If Humanity could have its proper sway, in opposition to the cunning policy of monopolists of the wealth and power of nations, the restrictions devised for their sinister purposes would be repealed, and our Indian corn and other bread-stuffs would find their way and spread abundance over lands that are threatened with the diseases and the mortality that ever follow in the train of starvation.

Without adverting farther, however, to the peculiar circumstances which must at this time enhance the importance of this root in the eyes of the agriculturist, we should deem the following worthy of a place, as an item of information, which will serve to give *variety to the assortment* that every gentleman agriculturist ought to possess; for we hope our readers have already discovered and approved our design, to go for the curious and the ornamental, as well as the useful and the money-making. We hope the time has arrived when young gentlemen in the country, as well as do cultivated and professional men in the towns, will, in regard to their reading, and researches, and intellectual exercises, begin to ask themselves some other question beside that very useful—but, when pushed too far, very vulgar one—*how much money will this put in my pocket?* The extract is from that profound work to which we have before referred—Dr. Kane on the Industrial Resources of Ireland:

"Of all the starch-bearing plants, the potato is that which affords the greatest quantity of produce from a given surface of land. The different varieties of potato differ, however, very much; and the following table will indicate exactly the circumstances of the most important kinds. The plants were grown all on the same quality of land, and the analyses are by Payen, the eminent French agricultural chemist.

Varieties.	*1 cwt. seed produced*	*1 statute acre produced*	*100 parts contained*		
			Water.	*Starch.*	*Gluten & fibre.*
Rohan,	58 cwt	14½ tons	75.2	16.6	8.2
Large yellow,	37 "	9½ "	68.7	23.3	8.0
Scotch,	32 "	8 "	69.8	22.0	8.2
Slow Island,	56 "	14 "	79.4	12.3	8.3
Legonzac,	32 "	8 "	71.2	20.5	8.3
Siberian,	40 "	10 "	77.8	14.0	8.2
Duvillers,	40 "	10 "	78.3	13.6	8.1

These results show that the quantity of starch is not largest necessarily in those varieties which yield the greatest weight of tubers. Thus an acre of large yellow potatoes, which gives but 9½ tons of tubers, produces two tons, three cwt. of starch, whilst the acre of Slow Island potatoes, which produce fourteen tons of tubers, give only one ton, fifteen cwt. of starch. In cultivating the plant for the purpose of extracting this material, it is, therefore, of the greatest importance to attend to the existence of these varieties.

The preparation of starch from the potato is an operation of very simple kind, and well adapted for the industry of the smaller towns, where potatoes would be usually cheap. It requires only the most ordinary skill, and involves little machinery, the greatest nicety in it being perfect cleanliness, and care that the washings be well finished and with pure water. The operations of the manufacture are

1st. Washing the tubers.
2d. Rasping them toa pulp.
3d. Pressing the pulp.
4th. Washing the rough starch.
5th. Draining and drying the produce.
6th. Bolting and storing.

Of these operations it is only necessary to notice one or two in detail.

The breaking up of the tubers into a pulp is accomplished by means of cutting cylinders, to which the potatoes are supplied from a hopper, nearly as grain is to a mill. The more rapidly the cutters move, the finer is the pulp produced, and the more perfect the subsequent extraction of the starch, and hence they generally make 600 to 900 turns in the minute, and as these cylinders are usually about twenty inches in diameter, their periphery moves with a velocity of from 1000 to 1500 yards in a minute. A single cylinder of the above dimensions, and of sixteen inches long, making 800 revolutions in a minute, will reduce to pulp about fifty bushels of potatoes per hour. This for the twelve working hours is about ten tons.

The object of pressing or sifting the pulp is to separate the fecula from all foreign substances, especially from the cellular tissue, which, being coarser, rests on the seive through which the fine starch passes. A great variety of mechanical arrangements have been constructed for this purpose, which fulfil their object, but there remains always with the residual pulp 2 or 3 per cent. of the fecula, which it is impossible to obtain.

The starch, diffused in the current of water by which it has been washed out from the pulp, is run into vats, where it is poured off, and fresh water put on: finally the starch is taken out and dried on floors. As it consolidates into very firm masses, it requires finally to be broken down by a kind of bolting machine, before being put up for sale.

It is necessary to add some valuation of the money circumstances of this manufacture. An acre of potatoes, very well manured, and on good land, may be considered to produce nine tons of potatoes, which may be taken as worth £15. From such potatoes it may be expected, that, with proper care, 15 per cent. of pure starch may be extracted, and hence, from the 9 tons, 27 cwt. The market price of the potato starch is variable; it has been 30s. per cwt., but it only on rare occasions falls below 20s. Taking it at 20s. the value of the produce of the acre becomes £27, leaving for cost of manufacture and profit £12, and of this certainly a large proportion should be profit. I do not think I value the potatoes too low, as, of course, the manufacturer, if not himself the grower, would purchase for store at proper seasons, and avail himself of the lowest terms.

But this calculation of advantage supposes the starch to be the only valuable matter extracted from the potato, which is far from being the case. The residual pulp, which, when perfectly dry, amounts to about 5 per cent. of the entire weight of the tubers, has been found a most nourishing food; in fact, it contains most of the nutritious part of the root, the mere starch which was removed being comparatively much less important in nutrition. This pulp, if moist, putrefies rapidly, it is rich in nitrogen, and in fact analogous to animal substances in composition, and, consequently, if not required for food would form, by being made with lime and clay into a compost, a manure of great value, and especially suitable for restoring to the potato ground the substances which the crop in growing had removed. The waters with which the pulp is first washed, dissolve a quantity of the soluble constituents of the potato. They rapidly putrefy, and exhale an odor so rotten as to have rendered the starch factories near Paris a nuisance to the neighborhood, until it was suggested to employ this water as a manure, which has been perfectly successful, and at once removed an important drawback to this branch of industry, and materially increased the fertility of the surrounding farms.

If these residues be properly economized, it is evident that the cost of growing the potatoes may be materially diminished. The atmosphere, in itself, furnishes in fact the carbonic acid and water from which the starch is formed, and if the matters taken from the soil in each crop, be returned to it in the residues of the manufacture, the cost of manure, so heavy for this particular plant, may be almost entirely obviated.

In this country, where the extensive use and culture of the potato have become almost a national characteristic; where labor not requiring considerable skill is to be had so cheap; where potatoes are at their minimum price; it is not merely to be regretted but absolutely disgraceful to ourselves, that we import from Scotland and from France, large quantities of the potato starch to be consumed in Ireland.

The starch is not the only material extracted from potatoes, and extensively available in the arts. The potato itself, reduced to flour, is at present extensively employed upon the Continent in the preparation of a very wholesome quality of bread, and the starch itself is consumed in making confectionary, jellies, sago, tapioca, in thickening paper, and in a variety of uses, by which such quantities of it are employed as to render its manufacture a really important and extensive department of industry. The most remarkable of all the applications of potato starch is, however, one to which the excise laws of this country would probably present invincible impediments. It is the preparation of sugar and of spirits. Under the influence of certain chemical agents, simple, yet peculiar in their action, and to which it would be my province here to refer in detail, starch is converted into sugar, and this sugar, by fermentation, yields spirits. On the Continent the manufacture of spirit from corn is almost abandoned. Potato spirit is almost universally used; and in flavor it so resembles brandy, that it is well known that a large quantity of the French brandy brought into London, is potato spirit from Hamburgh, colored with burned sugar."

☞ Mr. Bland, of Ripon, has an apple tree in his garden which has blossomed thrice this year. There are now upon it two crops of apples, and the blossoms for a third have just set. [English Paper.

☞ The *London Times* estimates the capital of seventy-four railways completed, or in course of completion, at £103,166,220—of projected branches of these, at £35,000,000. and of 707 new companies, either established or projected up to date, at £464,698,656—making a total of £602,864,876!

☞ The system of smuggling by means of dogs is represented by the Valenciennes journals to be still carried on with unabated activity. A few days ago ten dogs, laden with tobacco, and two men who had the direction of them, were caught by the officers of the customs at Alescon. [English Paper

THE INCLINED PLANE AND WEDGE.

From Dr. Dion. Lardner's Lectures, now in course of publication by Greeley & McElrath of New-York.

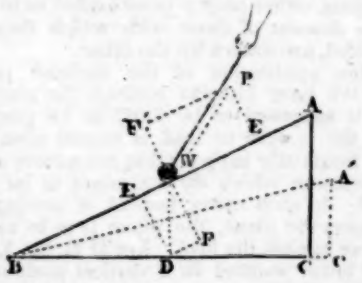
ALTHOUGH the connection between these two mechanical powers and practical Agriculture, may not be apparent at first sight, let the reader say, after perusal, whether any young man ought to be, and be satisfied to remain, ignorant of such matters, whose very business every day requires the practical use of contrivances by which he is enabled, at so little expense, to make vast additions to the animal power at his command? So it may be said of the lever and the pulley which shall be in like manner clearly explained in our next, from the same luminous author.

Thus do we proceed to demonstrate that we have many things in store for the accomplishment of young Agriculturists, besides telling them how much a hog of a favorite breed may be made to weigh in a given time on a given quantity of corn.

THE inclined plane is the most simple of all machines. It is a hard plane surface forming some angle with a horizontal plane, that angle not being a right angle. When a weight is placed on such a plane, a twofold effect is produced. A part of the effect of the weight is resisted by the plane and produces a pressure upon it; and the remainder urges the weight down the plane, and would produce a pressure against any surface resisting its motion placed in a direction perpendicular to the plane.

Let A B, fig. 1, be such a plane, B C its horizontal base, A C its hight, and A B C its angle of elevation. Let W be a weight placed upon

Fig. 1.



it. This weight acts in the vertical direction W D, and is equivalent to two forces—W F perpendicular to the plane, and W E directed down the plane. If a plane be placed at right angles to the inclined plane below W, it will resist the descent of the weight, and sustain a pressure expressed by W E. Thus, the weight W resting in the corner, instead of producing one pressure in the direction W D, will produce two pressures: one expressed by W F upon the inclined plane, and the other expressed by W E upon the resisting plane. These pressures respectively have the same proportion to the entire weight as W F and W E have to W D, or as D E and W E have to W D, because D E is equal to W F. Now the triangle W E D is in all respects similar to the triangle A B C, the one differing from the other only in the scale on which it is constructed. Therefore the three lines A C, C B, and B A, are in the same proportion to each other as the lines W E, E D, and W D. Hence A B has to A C the same proportion as the whole weight has to the pressure directed toward B, and A B has to B C the same proportion as the whole weight has to the pressure on the inclined plane.

We have here supposed the weight to be sustained upon the inclined plane, by a hard plane fixed at right angles to it. But the power necessary to sustain the weight will be the same, in whatever way it is applied, provided it act in the direction of the plane. Thus a cord may be attached to the weight, and stretched toward A, or the hands of men may be applied to the weight below it, so as to resist its descent toward B. But in whatever way it be applied, the amount of the power will be determined in the same manner. Suppose the weight to consist of as many pounds as there are inches in A B, then the power requisite to sustain it upon the plane will consist of as many pounds as there are inches in A C, and the pressure on the plane will amount to as many pounds as there are inches in B C.

From what has been stated, it may easily be inferred that the less the elevation of the plane is, the less will be the power requisite to sustain a given weight upon it, and the greater will be the pressure upon it. Suppose the inclined plane A B to turn upon a hinge at B, and to be depressed so that its angle of elevation shall be diminished, it is evident that as this angle decreases, the hight of the plane decreases, and its base increases. Thus, when it takes the position B A′, the hight A′ C′ is less than the former hight A C, while the base B C′ is greater than the former base B C. The power requisite to support the weight upon the plane in the position B A′ is represented by A′ C′, and is as much less than the power requisite to sustain it upon the plane A B, as the hight A′ C′ is less than the hight A C. On the other hand, the pressure upon the plane in the position B A′ is as much greater than the pressure upon the plane B A, as the base B C′ is greater than the base B C.

The power of an inclined plane, considered as a machine, is therefore estimated by the proportion which the length bears to the hight. This power is always increased by diminishing the elevation of the plane.

Roads which are not level may be regarded as inclined planes, and loads drawn upon them in carriages, considered in reference to the powers which impel them, are subject to all the conditions which have been established for inclined planes. The inclination of the road is estimated by the hight corresponding to some proposed length. Thus it is said to rise one foot in fifteen, one foot in twenty, &c., meaning that if fifteen or twenty feet of the road be taken as the length of an inclined plane, such as A B, the corresponding hight will be one foot. Or the same may be expressed thus: that if fifteen or twen-

ty feet be measured upon the road, the difference of the levels of the two extremities of the distance measured is one foot. According to this method of estimating the inclination of the roads, the power requisite to sustain a load upon them (setting aside the effect of friction) is always proportional to that elevation. Thus, if a road rise one foot in twenty, a power of one ton will be sufficient to sustain twenty tons, and so on.

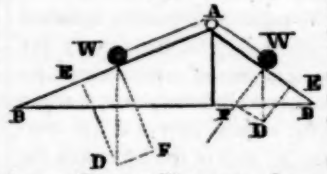
On a horizontal plane, the only resistance which the power has to overcome, is the friction of the load with the plane, and the consideration of this being for the present omitted, a weight once put in motion would continue moving forever, without any farther action of the power. But if the plane be inclined, the power will be expended in raising the weight through the perpendicular hight of the plane. Thus, in a road which rises one foot in ten, the power is expended in raising the weight through one perpendicular foot for every ten feet of the road over which it is moved. As the expenditure of power depends upon the rate at which the weight is raised perpendicularly, it is evident that the greater the inclination of the road is, the slower the motion must be with the same force. If the energy of the power be such as to raise the weight at the rate of one foot per minute, the weight may be moved in each minute through that length of the road which corresponds to a rise of one foot. Thus if two roads rise, one at the rate of a foot in fifteen feet, and the other at the rate of one foot in twenty feet, the same expenditure of power will move the weight through fifteen feet of the one, and twenty feet of the other at the same rate.

From such considerations as these, it will readily appear that it may often be more expedient to carry a road through a circuitous route than to continue it in the most direct course; for, though the measured length of the road may be considerably greater in the former case, yet more may be gained in speed with the same expenditure of power, than is lost by the increase of distance. By attending to these circumstances, modern road-makers have greatly facilitated and expedited the intercourse between distant places.

If the power act oblique to the plane, it will have a twofold effect: a part being expended in supporting or drawing the weight, and a part in diminishing or increasing the pressure upon the plane. Let W P, fig. 1, be the power. This will be equivalent to two forces, W F′, perpendicular to the plane, and W E′, in the direction of the plane. In order that the power should sustain the weight, it is necessary that that part W E′ of the power which acts in the direction of the plane, should be equal to that part W E, fig. 1, of the weight which acts down the plane. The other part W F, of the power acting perpendicular to the plane, is immediately opposed to that part W F of the weight which produces pressure. The pressure upon the plane will therefore be diminished by the amount of W F′. The amount of the power, which will equilibrate with the weight, may, in this case, be found as follows: Take W E′ equal to W E, and draw E′ P perpendicular to the plane, and meeting the direction of the power. The proportion of the power to the weight will be that of W P to W D. And the proportion of the pressure to the weight will be that of the difference between W F and W F′ to W D. If the amount of the power have a less proportion to the weight than W P has to W D, it will not support the body on the plane, but will allow it to descend. And if it had a greater proportion, it will draw the weight up the plane toward A.

It sometimes happens that a weight upon one inclined plane is raised or supported by another weight upon another inclined plane. Thus, if A B and A B′, fig. 2, be two inclined planes, forming an angle at A, and W W′ be two weights placed upon these planes, and connected by a cord passing over a pulley at A, the one weight will either sustain the other, or one will descend, drawing the other up. To determine the circumstances under which these effects will ensue, draw the lines W D and W′ D′ in the vertical direction, and take upon them as many inches as there are ounces in the weights respectively. W D and W′ D′ being the lengths thus taken, and therefore representing the weights, the lines W E and W′ E′ will represent the effects of these weights respectively down the planes. If W E and W′ E′ be equal, the weights will sustain each other without motion. But if W E be greater than W′ E′, the weight W will descend, drawing the weight W′ up. And if W′ E′ be greater than W E, the weight W′ will descend drawing the weight W up. In every case, the lines W F and W′ F′ will represent the pressures upon the planes respectively.

Fig. 2.



It is not necessary for the effect just described, that the inclined planes should, as represented in the figure, form an angle with each other. They may be parallel, or in any other position, the rope being carried over a sufficient number of wheels placed so as to give it the necessary deflection. This method of moving loads is frequently applied in great public works where rail roads are used. Loaded wagons descend one inclined plane, while other wagons, either empty or so loaded as to permit the descent of those with which they are connected, are drawn up the other.

In the application of the inclined plane, which we have hitherto noticed, the machine itself is supposed to be fixed in its position, while the weight or load is moved upon it.—But it frequently happens that resistances are to be overcome which do not admit to be thus moved. In such cases, instead of moving the load upon the plane, the plane is to be moved under or against the load. Let D E, fig. 3, be a heavy beam secured in a vertical position between guides, F G and H I, so that it is free to move upward or downward, but not laterally. Let A B C be an inclined plane, the extremity of which is placed beneath the end of the beam. A force applied to the back of this plane A C, in the direction C B, will urge the plane under the beam, so as to raise the beam to the position represented in

Fig. 3.

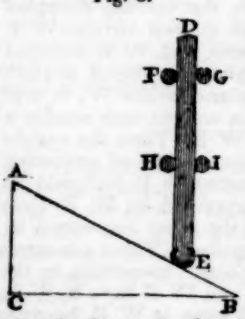
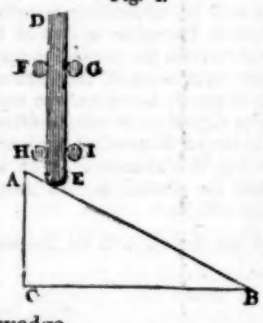


fig. 4. Thus, while the inclined plane is moved through the distance C B, the beam is raised through the hight C A.

Fig. 4.



When the inclined plane is applied in this manner, it is called a *wedge.*— And if the power applied to the back were a continued pressure, its proportion to the weight would be that of A C to C B. It follows, therefore, that the more acute the angle B is, the more powerful will be the wedge.

In some cases the wedge is formed of two inclined planes, placed base to base, as represented in fig.5. The theoretical estimation of the power of this machine is not applicable in practice with any degree of accuracy. This is in part owing to the enormous proportion which the friction in most cases bears to the theoretical value of the power, but still more to the nature of the power generally used. The force of a blow is of a nature so wholly different from continued forces, such as the pressure of weights, or the resistance offered by the cohesion of bodies, that they admit of no numerical comparison. Hence we cannot properly state the proportion which the force of a plow bears to the amount of a weight or resistance. The wedge is almost invariably urged by percussion, while the resistances which it has to overcome are as constantly forces of the other kind. Although, however, no exact numerical comparison can be made, yet it may be stated in a general way that the wedge is more and more powerful as its angle is more acute.

Fig. 5.

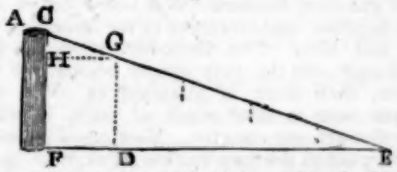
In the arts and manufacturers, wedges are used where enormous force is to be exerted through a very small space. Thus it is resorted to for splitting masses of timber or stone. Ships are raised in docks by wedges driven under their keels. The wedge is the principal agent in the oil-mill. The seeds from which the oil is to be extracted are introduced into hair bags, and placed between planes of hard wood.— Wedges inserted between the bags are driven by allowing heavy beams to fall on them. The pressure thus excited is so intense, that the seeds in the bags are formed into a mass nearly as solid as wood. Instances have occurred in which the wedge has been used to restore a tottering edifice to its perpendicular position. All cutting and piercing instruments, such as knives, razors, scissors, chisels, &c., nails, pins, needles, awls, &c., are wedges. The angle of the wedge, in these cases, is more or less acute, according to the purpose to which it is to be applied. In determining this, two things are to be considered—the mechanical power, which is increased by diminishing the angle of the wedge, and the strength of the tool, which is always diminished by the same cause. There is, therefore, a practical limit to the increase of the power, and that degree of sharpness only is to be given to the tool which is consistent with the strength requisite for the purpose to which it is to be applied. In tools intended for cutting wood, the angle is generally about 30°. For iron, it is from 50° to 60°, and for brass, from 80° to 90°. Tools which act by pressure may be made more acute than those which are driven by a blow; and, in general, the softer and more yielding the substance to be divided is, and the less the power required to act upon it, the more acute the wedge may be constructed.

In many cases the utility of the wedge depends on that which is entirely omitted in its theory, viz., the friction which arises between its surface and the substance which it divides. This is the case when pins, bolts, or nails, are used for binding the parts of structures together; in which case, were it not for the friction, they would recoil from their places, and fail to produce the desired effect. Even when the wedge is used as a mechanical engine, the presence of friction is absolutely indispensable to its practical utility. The power, as has already been stated, generally acts by successive blows, and is therefore subject to constant intermission, and, but for the friction, the wedge would recoil between the intervals of the blows with as much force as it had been driven forward.— Thus the object of the labor would be continually frustrated. The friction, in this case, is of the same use as a ratchet-wheel, but is much more necessary, as the power applied to the wedge is more liable to intermission than in the cases where ratchet-wheels are generally used.

When a road directly ascends the side of a hill, it is to be considered as an inclined plane; but it will not lose its mechanical character, if, instead of directly ascending toward the top of the hill, it winds successively round it, and gradually ascends, so as, after several revolutions, to reach the top. In the same manner a path may be conceived to surround a pillar, by which the ascent may be facilitated upon the principle of the inclined plane. Winding stairs constructed in the interior of great columns partake of this character; for although the ascent be produced by successive steps, yet if a floor could be made sufficiently rough to prevent the feet from slipping, the ascent would be accomplished with equal facility. In such a case, the winding path would be equivalent to an inclined plane, bent into such a form as to accommodate it to the peculiar circumstances in which it would be required to be used. It will not be difficult to trace the resemblance between such an adaptation of the inclined plane and the appearances presented by the thread of a *screw*; and it may hence be easily understood that a screw is nothing more than an inclined plane constructed upon the surface of a cylinder.

This will perhaps be more apparent by the following contrivance: Let A B, fig. 6, be a common round ruler, and let C D E be a piece of white paper cut in the form of an inclined

Fig. 6.



plane, whose hight C D is equal to the length of the ruler A B, and let the edge C E of the paper be marked with a broad black line: let the

edge C D be applied to the ruler A B, and, being attached thereto, let the paper be rolled round the ruler; the ruler will then present the appearance of a screw, fig. 7, the thread of the screw being marked by the black line C E, winding continually round the ruler. Let D F, fig. 6, be equal to the circumference of the ruler, and draw F G parallel to D C, and G H parallel to D E, the part C G F D of the paper will exactly surround the ruler once; the part C G will form one spire of the thread, and may be considered as the length of one inclined plane surrounding the cylinder, C H being the corresponding hight, and G H the base. The power of the screw does not, as in the ordinary cases of the inclined plane, act parallel to the plane or thread, but at right angles to the length of the cylinder A B, or, what is to the same effect, parallel to the base H G; therefore the proportion of the power to the weight will be, according to principles already explained, the same as that of C H to the space through which the power moves parallel to H G in one revolution of the screw. H C is evidently the distance between the successive positions of the thread as it winds round the cylinder; and it appears, from what has been just stated, that the less this distance is, or in other words, the finer the thread is, the more powerful the machine will be.

Fig. 7

☞ The action of the Screw will be illustrated in our next.

PEA CULTURE IN THE SOUTH.

WHY IS IT NOT EXTENDED OVER VIRGINIA, AND INTRODUCED IN MARYLAND?

PLANTERS of the best judgment in Carolina, look upon the culture of *Peas* as one of the most practicable and powerful auxiliaries in every system for the improvement of worn-out lands. We have been indulging the hope of a communication on the subject from a gentleman of South Carolina, whose name is associated there, with whatever is proposed with a view to Agricultural improvement. From him we might expect a clear account, not only of the mode of culture and how it is brought to do its part in the general system, for immediate profit and ultimate improvement, but to be favored also with his opinion—always entitled to respect—as to its action. The theory, we believe, is that the pea draws its support, like clover, chiefly from the atmosphere, and that plaster of Paris has the same effect on both. We are well convinced from what we have heard that large districts of country, north of the region within which field-pea culture is practiced with great benefit, are losing much precious time and a valuable resource, in postponing their inquiries into, and adoption of that auxiliary to their plans for improving their farms. Until we get fuller and more exact information, we give the following from the last Southern Agriculturist:

There is perhaps no section of country in the upper districts, which has improved more in Agricultural condition than the "Old Pendleton" neighborhood—the result, we are told, of an Agricultural Society, composed of intelligent and practical farmers. We were struck with the manifest improvement in the breeds of cattle and hogs. The Berkshire cross has here told well—for the very simple reason, we presume, that stock is attended to. We have never seen a finer stock of hogs, in traveling through any country. More attention seems to be paid to the pea culture here, than in any section we have been. We are told that it is the opinion of many good farmers hereabouts, that land can be improved to a high degree by the pea culture. We have no doubt of the fact, if properly applied. There is a pea, the Chickasaw pea, which bears most abundantly, and once planted, is almost inextirpable. We have seen it put into corn ground—after the corn was taken off—pastured by the cattle and hogs all the winter—in the spring put in oats, and after the oats were taken off, the pea came up in great abundance. Now suppose these were to be let alone, and in lieu of the absurd system of pasturing stubble, the *vine* and *stubble* should be turned under in the fall—would not the land be vastly improved? We have no doubt—if the pea were sown on our stubble lands—a peck to the acre—and the crop turned in while in the bloom—that the effect produced would be equal to the best clover ley, so much esteemed in Virginia and at the north. It is an admitted fact, that leguminous plants exhaust a soil in a very slight degree.

The pea vine contains about 53 per cent. of potash, a most important ingredient in all soils, for the production of grain or cotton. If this should be returned to the soil, in addition to the carbon and nitrogen contained in the vine, it seems to me that there would be a manifest improvement. It has been discovered by analysis that cotton wool contains potassa 31.09 per cent.; lime, 17.05; magnesia, 3.26; phosphoric acid, 12.30; sulphuric acid, 1.22. That the seed contains phosphoric acid, 45.85; lime 29.79; potassa, 19.40; sulphuric acid 1.16 per cent. While corn contains potassa 20.87; phosphoric acid, 18.80; lime, 9.72; magnesia, 5.76 per cent. The following analysis of straws may not be uninteresting:

	Wheat straw.	*Barley straw.*	*Oat straw.*
Potash.....	¼	3½	15
Soda.....	¼	1	15
Lime.....	7	10½	2¾
Magnesia.....	1	1½	¼
Alumina.....	2¾	3	¼
Oxide of iron..	2¾	½	¼
Silica or flint..	81	73½	80
Sulphuric acid.	1	2	1½
Phosphoric do.	5	3	¼
Chlorine.....	1	1½	¼
Total.....	100	100	100

From the foregoing data we learn that potash

is a most important ingredient in cotton and corn, and that the pea vine and cotton seed would be most invaluable manures—how easy would it be to avail ourselves of both. If a planter should sow twenty bushels per acre of cotton seed, upon a luxuriant vine crop, and put it in wheat—is it not reasonable to suppose that the advantage derived would be as great as from a clover ley, and gypsum. We are sure the elements are nearly the same, and we have no doubt of its effect. It is an admitted fact, we believe, that oats exhaust land more than any other grain crop. The mystery is solved, we think, by the analysis, for thereby oats are found to contain 15 per cent. of potassa, while barley straw contains only 3½, and wheat ½ per cent. No doubt the rapid growth of oats, and close pasturing, aids much in the exhaustion of the soil, and we derive an important lesson from the analysis—the want of potassa in the soil—which may be supplied by the pea crop, and the keeping off one's stock. Grass does not exhaust a soil, for the very simple reason that it takes up no potash. Grass contains carbon 45 per cent.; hydrogen 5; oxygen 38; nitrogen 1½; and ashes 9 per cent.

Every old woman in the country can tell us that post-oak and hickory contain the most potash—yet how few farmers know that this is the reason why post-oak and hickory lands are the most productive. Let a piece of land of this growth be exhausted and turned out, and it will put up pine, which contains less potash, perhaps, than any other tree. For this reason, an old pine field will produce but a few years without manure. In all old pine fields, you will find an abundant supply of silica, and if you will only add the potash, you are certain of a good crop.

We look forward to a day when the pea crop will be found a most perfect auxiliary in the resuscitation of the worn-out lands of the South. Clover cannot be grown here—the climate is altogether too hot to expect a luxuriant growth to answer for manure. We see no resource left us but the pea culture.

PAUL PRY.

SOCIETIES OR CLUBS FOR THE PROMOTION OF AGRICULTURE, HORTICULTURE AND FLORICULTURE.

IT would be altogether superfluous at this day, to dwell on the happy influences of such associations. On more than one occasion have we adverted to the subject, and shall take room only to say that, in the hope that such Clubs will be infinitely multiplied, we deem it expedient to make record of the following CONSTITUTION, which, with such modification as circumstances may suggest, will serve as a form for other Clubs that may come into existence; as come we hope they will, in every town and village throughout the Union. Especially are they wanting in the South. Let but two or three young men, desirous of being useful, get together and make a beginning, and they will soon see how easy it will be to create a taste for embellishment of gardens and grounds, and for Agricultural and Horticultural literature. Let them but plant the nut, and the tree may almost be left to grow and spread of itself. Take, for instance, our old State—Maryland. Why should not such a Club be established in good old Annapolis, in Easton, Cambridge, Princess Anne, Snow Hill, Elkton, Bell-Air, Frederick, Hagerstown, Upper Marlboro, in short, in every village of the State? It would take but a small portion of the means which are expended on less worthy objects, to form the nucleus of a Club Library. But we have said enough; "where there is a will there is a way."

We have no hesitation in saying that the discussions which take place, and the experience communicated, at the meetings of the *Farmers' Club* and the *Agricultural Association* in New-York, throw more light on the means of improving the Agriculture and Horticulture of the country; and that they are really the means of promoting more intellectual application to these subjects and of eliciting a greater amount of new and valuable suggestions and information, than are all the mere exhibitions that have taken place in the State. We have unaffectedly regarded it as a serious loss, that our engagements have not permitted us to give to these clubs and associations regular attendance, were it only for individual benefit, and the pleasure which every one must feel when he knows that he is making additions, even the smallest, to his stock of knowledge.

CONSTITUTION OF THE NORTHAMPTON AGRICULTURAL, HORTICULTURAL AND FLORICULTURAL CLUB.

ARTICLE I. This Association shall be known as the NORTHAMPTON AGRICULTURAL, HORTICULTURAL AND FLORICULTURAL CLUB.

ART. II. The object of the Club shall be circulation of general intelligence and practical instruction, in all the branches of Agriculture, Horticulture and Floriculture:

1. By the establishment of a permanent library of the best books on those subjects.
2. By the establishment of a correspondence with other bodies seeking the same objects
3. By procuring the most rare and valuable kinds of seeds, plants, shrubs and trees.
4. By the establishment of Lectures, Discussions, Exhibitions, and other means for the general circulation of knowledge on the subjects embraced by the Club.
5. By planting shade trees on all the avenues and public squares of the town.

ART. III. The officers of the Club shall consist of a President, three Vice-Presidents, a Corresponding Secretary, a Recording Secretary, a Treasurer, a Librarian, a Standing Committee of three persons each on Agriculture, Horticulture, and Floriculture, and a Board of Directors to be composed of the President,

Vice-Presidents, and Chairmen of the three Standing Committees, which Board shall have the charge and general management of the property and business of the Club, subject, however, to the order and direction thereof.

ART. IV. All the officers shall be chosen by ballot at the annual meeting of the Club, which shall be holden on the first Wednesday in August in each year, at such time and place as the Directors shall order.

ART. V. All special meetings of the Club shall be called by the Recording Secretary, on the requisition of a majority of the Directors, or of any five members, made in writing therefor, and notice thereof—as well as of all regular meetings—shall be published in one or more of the newspapers printed in Northampton, two days at least before such meeting.

ART. VI. Any person may become a life member of the Club by the payment of fifteen dollars into the Treasury at any one time.

ART. VII. This Constitution may be altered or amended by the votes of two-thirds of the members present at any regular meeting, provided the same shall have been proposed in writing at a previous regular meeting.

BY-LAWS.

1. Each member shall pay annually into the treasury the sum of one dollar. Any member who shall fail to pay his annual assessment, or any fines or forfeitures on books taken from the Library, for the space of ninety days after the annual meeting shall then cease to be a member of the Club, and forfeit all his rights and privileges as such, and to the library and other property belonging to the same.

2. All books, save such as the Board of Directors except, may be taken from the Library by the members on Saturday of each week. No book shall be detained from the Library longer than ten days, under a penalty of five cents for each day it is so detained, and any member lending a book belonging to the Club shall pay as a penalty the sum of one dollar for each week such book shall be so loaned.

3. Any member who may lose a book belonging to the Library shall pay the value of the volume or set, as assessed by the Librarian.

4. It shall be the duty of every member of the Club annually to plant at least one tree for fruit or shade.

5. The Treasurer shall give bonds to the acceptance of the Directors.

6. No money shall be paid by the Treasurer, unless upon a written order of a majority of the Directors.

7. A record of payment of subscription shall be the evidence of proprietorship for the year it is so paid.

8. The Treasurer at each annual meeting, and so often as he may be required, shall render an account of all receipts and disbursements of the Club for the year then past.

9. The Recording Secretary shall keep the records of the meetings, and at each annual meeting report a list of the members of the Club, and also of those who mey have forfeited their rights as members.

10. The Librarian shall keep a catalogue of all the books in the Library, and assess all fines for loss, damage, or detention of any book therein; also keep an account of all books loaned to members.

11. The Club shall hold monthly meetings for the purpose of hearing addresses, discussing questions, and receiving reports on the several subjects embraced by the Club.

12. No alteration shall be made in any By-Law, except at one of the regular meetings, written notice having been given at a previous regular meeting.

AGRICULTURAL PREMIUMS:

PROPER OBJECTS TO BE PROMOTED BY AWARDING THEM.

THE season, we suppose, may be said to be closed for *Agricultural Exhibitions and Addresses*; and it may be safely affirmed, that they have been generally attended with unabated interest and animation. There is abundant evidence that the right spirit is abroad—that the Agricultural community is fully sensible that theirs, too, is a business that is *in progress*, and susceptible of being meliorated and advanced, by that spirit of investigation and discovery which characterizes the age, and under the influence of which all other branches of science and of industry are marching onwards to higher and higher degrees of efficiency and success. The Addresses which have been delivered have been, in many cases, at once more scientific and more practical—more indicative of a conviction on the part of their authors and the public, that hereafter AGRICULTURE is to be looked to as an intellectual, and, in that sense, a polite and honorable vocation. Let that sentiment be followed up and encouraged; let the premiums offered, and all the measures taken by Agricultural Institutes and Associations, have a tendency more and more to prompt investigation of the principles and labor-saving improvements in the machinery and implements of Husbandry, so as to secure the most skillful combination of the materials for making manure, a better understanding of the time and manner of applying it; to secure more efficiency to labor by a better construction of the artificial contrivances for tilling the soil and harvesting its products. In a word, the desideratum is to obtain the greatest profit from the means at the command of the Farmer; and this should be the result, not of chance or empiricism, but of a system, the reasoning and principles of which should be well understood. Seeing that, as we before said, the spirit of improvement is abroad, the true object of all associated effort should be to enlighten it, and to give it a proper direction; and here, we respectfully think, great mistakes are sometimes committed: an undue and improper estimate is placed on objects which need no encouragement, and are, sometimes, even unworthy of it; while others, less attractive and showy, are disregarded and overlooked. It too often happens that success in the competition to which these premiums invite, cannot be the fruit either of genius or industry on the part of the winner of the premium, or conducive in any way to the

interests of the Agricultural community where such premiums are given. As for one example out of many: where is the benefit to be derived from offering a bounty to those who will send the largest sum of money, very often out of the County and State, for the most *splendid match geldings or mules to be had in the Union?* What sort of policy is it that offers a premium for the largest crop of corn or turnips, or the fattest hog or bullock, when the process adopted and the expenditure made to obtain the premium may make the crop or animal, as in his mother wit the Indian says, "cost more than it comes to;" and would prove a losing concern to all who should be lured into the adoption of the course pursued by the winner of the premium? The old Society of Massachusetts, which existed and had scattered the seeds of improvement broadcast, long before most of our Institutes and Societies came into being, could never be prevailed on to offer a premium for a *horse* of any kind, saying, that of all machines, the horse was the most expensive for practical Farmers. Without meaning to intimate that the same policy would suit all localities, it may yet be insisted that premiums should only be offered for the best elucidation of systems, and the production of the best specimens, that it would be to *the interest of Farmers in the County, or the State, as the case may be, generally* to follow and to cultivate. Particularly should it be the care of those who dispose of a Society's funds, to stimulate the mind to the discovery of new processes and new implements, and to the introduction of new and profitable objects of culture! They should rather discourage a mawkish taste for gew-gaws and fat things, and lead it to be entertained with what is new in its kind, ingenious and solid in its structure, labor-saving and useful in its principle, and economical and profitable in the means used to produce it, and in the uses to be made of it. Let that vulgar taste be discouraged which at an Agricultural exhibition we often see leads the whole mass of people away from the most interesting discourse on the principles of Agriculture, and from the rarest collection of the most ingenious and perfect machinery, to gaze at a *sleek, beefy, long-tailed, prancing stallion!* If the object be merely to gather an immense crowd, that may as well be done by a militia mustering, or an exhibition of Jacko riding on a pony.

In the last number we engaged to speak again in reference to the list of premiums then published, as offered by the *Highland Agricultural Society*, saying "the reader can then judge for himself, as to the exercise of the mind, the degree of intelligence, and the class of men required to battle for these prizes, and the usefulness, permanent usefulness, of the information which *such* prize essays must contain." We proceed to redeem that engagement, but imperfectly, in the fear that many may think we give too much space to the subject. But our aim is, let us once more explain, to invoke more *thought*, more calm investigation, on the part of executive officers and committees, who distribute the funds of zealous, well-meaning, and hopeful contributors, in a manner to produce the greatest amount of individual property and national wealth, rather than in a way to ensure dazzling spectacles and glittering arrays of things made and polished up for the occasion. We are persuaded that from this list of premiums and explanation of the reasons for proffering them, and the points to be considered and set forth by those who contend for them, American Societies may derive valuable information and take some hints that may be useful. We need hardly add that but for this strong persuasion we should not have yielded so much space to the subject. These extracts might be extended if we had room.

ESSAYS AND REPORTS ON SUBJECTS CONNECTED WITH THE SCIENCE AND PRACTICE OF AGRICULTURE.

FEEDING OF STOCK.—It is required to be ascertained, by direct experiment, the actual addition of weight to *growing* and to *fattening* stock respectively, by the use of different kinds of food, as well as the exact effect of weighed quantities of food of different kinds, upon the quantity and quality of milk, in full-grown milk cows *in calf and not in calf*, and the Society offers a premium of twenty sovereigns, or plate of that value, for the best Series of Experiments having this object in view, either in regard to growing, full-grown, and fattening Stock, or to Dairy Cows.

The attention of the experimenter will be drawn to the effects of turnips, carrot, beet, potato, or other roots, as well as to that of beans, oats, barley, and oil cake, and to the opinion that warmth is equal to a certain amount, or causes a certain saving of food.

Before commencing the comparative experiments, the animals must be fed on equal quantities of the same kinds of food for some weeks previously.

The animals tried against each other should be, as nearly as possible, of the same age, weight, condition, maturity, and purity of breed. Different breeds may be compared, and this will form an interesting experiment of itself.

The animals are to be treated, in every respect, alike. The food and drink to be regularly weighed and measured, and samples of the food (when this can be done) carefully analyzed. The live and, if if killed, the dead weights of the animals, at the close of the experiment, should be ascertained, and the quantity of tallow which they yield.

RADICAL EXCRETION OF PLANTS.—Twenty sovereigns, or plate of that value, will be given for the best and approved Essay on the Radical Excretion of different Plants, or the various substances discharged from their roots. It is desirable to examine the subject physiologically as well as chemically, and to ascertain the existence, or otherwise, of a power of excreting various noxious substances previously absorbed, as well as of the supposed natural excretions. It will also be desirable to contrast, and endeavor to explain, the well-known fact of certain

species being crowded together for many centuries, as in native forests, and yet thriving, with the equally well-known fact of the degeneration of other species, as wheat, when cultivated for even a few years upon the same spot.

Note.—Decandolle, Macaire, and others, from various experiments, have been led to suppose that different excretions are discharged from the roots of plants, which may probably account for their effects in deteriorating the soil for the production of the same species. The Essays are expected to give the result of original experiments, determining the fact whether or not such excretions occur; and, if they do, to ascertain the chemical nature of the matter excreted from different plants, more especially the cultivated Graminea, Leguminose, and Cruciferæ.

Analysis of Oats.—Little is yet known of the true composition of oats, either of their organic or of their inorganic parts. The nature of the organic parts, for example, is believed to vary with the kind of soil in which the oat is grown—strong land, light land, and peaty soils, each growing its own peculiar samples from the same seed. The kind of manure and the season cause similar differences, which become more marked still, when different varieties of oats are compared with one another. Again, the inorganic part of the oat varies with the same circumstances of soil, manure, climate, and variety of seed; but it is not known to what extent it varies, either as to quantity or quality.

The Society offers a premium of fifty sovereigns for the analytical examination of the grain of oat, by which the greatest number of the above points may be ascertained.

The object of the inquiry is to throw light upon the general value of the oat, and of its different varieties, as a food for man or beast; and upon the mode of culture which in different districts ought to be adopted in order to raise this or that quality or variety.

On Raising Improved Varieties of Agricultural Plants.—For an approved Report, founded on actual experiment, detailing the means which may have been successfully employed by the reporter for obtaining new and superior varieties, or improved sub-varieties, of the different cultivated grains and grasses, clovers, beans, peas, turnips, potatoes, or other Agricultural plants, either by minute attention to the selection of the seed, by hybridation, or such other means as may have been found efficacious—the gold medal, or plate of the same value.

It is necessary that the varieties and sub-varieties reported upon shall have been proved capable of re-production from seed, and also that the relation they bear to others, or well-known sorts, shall be stated. The reporter is farther requested to mention the effects that he may have observed in different soils, manures, &c, to produce on the plants forming the subjects of report, and how far he may have ascertained such effects to be lasting.

Note.—Should any improved variety reported upon be the result of direct experiment by cross impregnation, involving considerable expense and long continued attention, a higher premium will be awarded.

On the Cultivaton of Red Clover.—For an approved Report on the best mode of managing lands which have become sick or tired (as it is termed) of common Red Clover, *Trifolium pratense*, so as to restore their capability of properly yielding that crop for hay, &c. without altering the generally practiced system of rotation—the gold medal, or ten sovereigns.

Influence of Plants on Dairy Produce.—For an approved Essay or Report on the Influence of Plants taken as Food, on the taste, flavor, or quality of milk, butter, cheese, or other Dairy Produce—ten sovereigns, or plate of that value.

Note.—It has been long known that the milk produced from particular pastures during certain months is deteriorated, and that the butter and cheese made from it are imperfect in flavor and in quality, so as sometimes to be unfit for use. This effect is supposed to arise from certain plants growing (and during these months flourishing) in the pastures; and it is to ascertain these, and their effects, that the above premium is offered. It is desired that the effects on the milk, &c. from the eating of such supposed noxious plants, shall be stated from experiment; and that dried specimens of the plants shall accompany the Essay. The particular seasons or months such plants are in their highest vigor should also be mentioned, and the best manner of extirpating them.

Reports on Irrigation.—The gold medal, or a piece of plate of the same value, will be given for the most approved account of the management of Water Meadows, founded on actual experiment within three years preceding the date of the Essay.

The experiments must be made on not less than five acres, whether detached or otherwise, and a description to be given of the rills or streams employed, and of the quality of the water, and of the manner of collecting and applying it, also an account of the land prior to the introduction of irrigation upon it, and of its estimated value at that period, and at the time when the Report is made; certified statements to be furnished of the quality of grass, if any, cut green in the spring, and the quantity and quality of the hay and aftermath produced upon the portion reported on, and the kind of stock, if any, which has been allowed to depasture it.

Construction of Tanks.—For a Report upon the most approved and most economical method of constructing Tanks for collecting liquid manure from stables, byres, and pigsties suitable to ordinary farm steadings; and also on the best means of draining off from the dunghill the liquid manure into the Tank—ten sovereigns.

Competitors to state the most eligible materials for the purpose, the expense, and the form and proper dimensions in proportion to the number of cattle, &c. the best mode of drawing off the contents and of applying it to the soil.

Potato Blossoms.—As great diversity of opinion prevails regarding the advantage gained by picking the blossoms from the stems of potatoes, instead of allowing the germs to ripen into seed apples, the medium gold medal will be given for the most approved Report of trials made with different varieties of potatoes, quality as well as quantity to be taken into account.

The trials to be made on portions of not less than a quarter of an acre each, care being taken in removing the flowers that the stems are not injured.

Disease in Potatoes.—The Potato Crop, which is of such importance in this country, having become very generally infected with disease, the Society is desirous, if possible, of ascertaining whether or not, by the aid of chemical analysis, any light can be thrown upon the cause of the disease, and upon the remedy to be applied.

A premium of fifty sovereigns is therefore offered for the best and approved analysis of sound and unsound Potatoes, and of the soils on which they grew. The analysis of the several varieties of Potato, to embrace both their organic and inorganic constituents. The details of the experimental researches, which will include Potatoes both at taking up and at seed time, and the method of analysis adopted, to be given in the Essay.

ON THE NUTRITIVE PROPERTIES OF TURNIPS RAISED WITH DIFFERENT MANURES.—With the view of testing the comparative feeding properties of Turnips grown with guano and with farm-yard manure, a premium of twenty sovereigns will be given for the most approved Report on the progressive improvement and increase in weight, (during a period of at least four months) of three lots of cattle, of not fewer than four in each lot, fed on turnips and straw, or turnips and hay, in the following manner:

1. Four fed on turnips grown with guano alone.
2. Four fed on turnips grown with farm-yard manure alone.
3. Four fed on turnips grown with one-half guano and one-half farm yard manure.

The animals selected to be as nearly as possible of the same age, weight, condition, and breed, and to be treated in a similar manner in every respect.

The live weights of the animals to be ascertained before they are put up to feed as well as at the close of the experiment, and if the animals are slaughtered, the dead weight and quantity of tallow which they yield respectively.

The turnips grown with the different manures to be on land of equal quality and in equal condition, and the quantity supplied to each lot to be weighed.

TUSSAC GRASS.—The medium gold medal will be given for the most approved report, founded upon actual experience, on the cultivation in this country, of the Tussac Grass, *Dactylis cæspitosa*—seeds of this valuable grass having been lately introduced into Scotland from the Falkland Islands, where it is said to be found growing in great luxuriance, chiefly on peaty soils, within the influence of the sea. It is also said to grow on sandy soils under the same influence, and where the climate is similar to that of Great Britain.

This premium is offered in order that the result of experiments made may be publicly known, and to ascertain if its extended cultivation in this country would be beneficial.

Parties who have received portions of the parcels of seed transmitted by the Colonial Secretary are expected to report on the results of their experiments, including all the particulars regarding them, whether successful or not.

ON THE ADVANTAGES OF DIBBLING IN SOWING.—For a Report, founded on actual experiment or observation, to ascertain and point out the advantages of sowing grain by the process of Dibbling—the gold medal, or ten sovereigns.

WOOL.—For the best Essay on the Structure, Conformation, and Physical Properties of Wool, and on the Nature and Uses of the Sebaceous Secretion of the Skin of Sheep—the Yolk—the gold medal, or ten sovereigns.

Note.—Under the former head must be included a detailed description of the different kinds of Wool which are at present cultivated in the United Kingdom, with deductions from their structure as to their comparative value and utility for manufacturing purposes; and, under the latter, the special influences which the yolk exerts upon the Wool, the necessity or inutility of artificial salving, and in those circumstances where such has been used, the safest and most efficacious methods of removing it from the fleece, and the bleaching and purifying of the Wool from the "gilting" that may have resulted from its application.

ANALYSES OF THE ASHES OF PLANTS.—For the best Series of Quantitative Analyses of the Ashes of the Cultivated Plants, or of the more common weeds growing on the different soils in Scotland—fifty sovereigns.

Note.—As the Society has already offered premiums for the analyses of oats and potatoes, competitors who make choice of cultivated plants will select any of the others in common cultivation, as wheat, barley, turnips, or beans.

The more abundant weeds should also be selected for analysis, full-grown, healthy plants being in every case taken.

Separate analyses should be made of the stalk of the plant and of the seeds, and in the turnip or other plants with large roots, also of the bulb. Intending competitors are referred to the latest edition of Liebig's Agricultural Chemistry; and, for an account of the best method of ash analysis, to a paper by Drs. Will and Fresenius on the inorganic constituents of plants, in the Memoirs of the Chemical Society of London, part 9.

EXPERIMENTS IN DEEP PLOWING.—In order to obtain information on the results of subsoil plowing, trench-plowing, or any other mode of deep plowing on thorough-drained land, or on land that does not require draining, with the comparative merits of the different modes on the same soil, the Society offers an annual premium of the gold medal for the best and most satisfactory account of experiments made on not less than four acres of land of as nearly as possible the same quality and description—stating the description of soil, and the subsoil upon which it rests—in each of the methods of plowing, one-half of which shall have been deep plowed, and the other half cultivated in the ordinary way. The whole extent of ground to be under the same description of crop, and in other respects both portions to be cultivated and managed alike. The quantity and quality of the produce of each portion to be stated the depth reached by the plow to be noticed, with such other observations as the experimenters may deem deserving of attention.

Besides the principal premium for the year, the Society proposes to give honorary premiums for such reports as shall be deserving of distinction.

VEGETABLE PRODUCTIONS OF INDIA, CHINA AND AMERICA.—The gold medal will be given for the best, and the medium gold medal for the next best and approved Report on the Hardy or supposed Hardy Trees, and useful Herbaceous Plants, including grains and grasses, of China, the Himalaya country, the Falkland and South Sea Islands, California, and the high north-western districts of America, where such climate exists as to induce the belief that the plants may be beneficially introduced into the cultivation of Scotland.

There being reason to believe, that in addition to the useful vegetable productions which have of late years been introduced from Upper India, California, &c. many others may exist in the same regions, and in China, equally well suited to this climate, the Society has been induced to offer the above premiums with a view towards obtaining the fullest information relative both to the introduced sorts and those already known in this country, for the purpose of encouraging the introduction of the former, as well as the more extended culture of the latter. Reporters are, therefore, required to give the generic and specific names, with the authority for the same—together with the native names, in so far as known; also to state the elevation of the locality and nature of the soil in which they are cultivated, or which they naturally inhabit, with their qualities or uses; and it is farther requested, that the descriptions be accompanied, in so far as possible, with specimens of the plants and their fruit, seed, timber, or other products.

The transmission of living plants in boxes, or in cases covered with glass, may be attempted where practicable; the external air being excluded, and almost no water given during the voyage. Where this plan is adopted, smaller seeds, berries, or heps, may be thickly mixed with the soil or earth in which the plants are placed. Seeds may be sent home in cones, wrapped in brown paper, packed in a box, to be kept in a cool airy part of the cabin, but on no account in the hold, nor in close tin cases. In the event of the seeds of Coniferæ being separated from the cones, with the view of lessening the bulk and weight of packages intended for overland carriage, hasty and severe heating, in extracting the seeds, should be carefully avoided.

REPORTS ON IMPROVED RURAL ECONOMY ABROAD.—The honorary gold or silver medal of the Society, according to the value of the communication, will be given for approved accounts, founded on personal observation, of any useful practice or practices in Rural or Domestic Economy, adopted in other countries, which may seem fitted for being introduced with advantage into Great Britain.

The purpose chiefly contemplated by the offer of this premium, is to induce gentlemen who may visit other countries to take notice of and record such particular practices as may seem calculated to benefit their own country in the branches of the arts referred to. The earliest opportunity will be taken of communicating the reports to the public.

WEBSTER'S DOMESTIC ECONOMY AND HOUSE-KEEPING. Edited in this country by DOCTOR REESE, and published by the Harpers—

Is a work of more than 1200 pages, illustrated by nearly one thousand engravings. Perhaps it would be easier to say what it does not, than what it does contain; for it seems to be a sort of *omnibus* in which all sorts of things relating to House-Keeping and Domestic Economy have been gathered up Take, for one example, MILK—cows'—its properties—artificial coagulation of—skimmed—considered as an aliment—asses'—goats'—ewes'—mares'—camels'—buffaloes'—supply of to the metropolis—adulteration of—preservation of—management of in the dairy, &c. &c. With this book, *and a good housewife*, any man may get along, provided he plays his own part, as any man ought to do, or—be *Caudled*.

REPORT ON THE SCHEME FOR REDUCING THE GROWTH OF COTTON IN THE U. S.

WE regret not to have in this number space enough for the "Report by W. W. Seabrook & T. Belton O'Neale, on the scheme for reducing the quantity of cotton grown;" and which we now find for the first time in the Southern Planter for November. As might have been expected, they came promptly to the conclusion that the scheme was impracticable, and not expedient if it could be put in practice. Not at all incompatible with that conclusion, is the yet remarkable passage in the Report that "another cause of distress is, that in a large portion of the Southern country, cotton is cultivated, when its production does not now, and never can at all compensate the planter for the labor bestowed. *Then* it is desirable for every one, that other branches of industry should be pursued. In such sections, says the Report, manufactures may be most profitably substituted; and every manufactory established, will be not only additional wealth to the proprietors and the country, but will also materially aid the cotton planter by increasing the consumption." This very interesting Report goes on to add "to what else [than cotton] can the planter of the South, so profitably turn his attention? To grain? He already, in ordinary years, produces twice as much as the middle States, and about one-eighth more than the West. In Indian corn alone, the produce of the South, by her last census, was three hundred millions of bushels! If the planter of cotton is engaged in an unpromising business, much more so is the raising of grain. The interest on capital invested in Agriculture at the north is less than 3 per cent.; *here* it is about 4 per cent. That the rice and tobacco culture might be profitably extended in this State, and will be in the South-West and Texas, is true. Millions of acres in South Carolina, including the lower counties, are admirably adapted to the raising of rich grasses. This might be added as another branch of industry, from which reasonable profits could be realized, and might very well be added to the cotton planter's income. The business of tanning, and the manufacture of leather, might be, and ought to be extended. In this State, all the means of a successful pursuit of this branch of industry are at hand, and within the reach of every one. Hides, lime, bark, and mechanics (slaves,) are abundant. A few years ago the capital engaged in this branch of industry in Massachusetts was $14,000,000, while that of cotton was $13,000,000, and wool less than $11,000,000."

The committee farther report their opinion that with many of the planters in Mississippi, Louisiana and Texas, the culture of tobacco and sugar will supersede that of cotton.

Deeming this Report, from such a committee on a great Agricultural question, as one of primary importance in a national view, we shall preserve and extend it through the Agricultural department of the New-York Albion, until it can be transferred, for the same purpose, to the pages of the Farmers' Library.

SHEEP HUSBANDRY ... EFFECTS OF CLIMATE AND FOOD.

THOSE who have complimented this Journal with a careful perusal, need hardly now be told that we consider *Sheep Husbandry*, under existing circumstances, as among the most important subjects that can engage the attention of the inquiring agriculturist; and they will of course have concluded that in due time, we design to present it in all the aspects in which it has been discussed by the most experienced men and the most enlightened writers. To do this, will require research, consideration and space, proportioned to its magnitude as a branch of national industry. We have already at command, the information to be derived from English and American books, and from translations of French authors who have gone yet more thoroughly into the natural history and constitution of wool and wool-bearing animals; but we have reason to believe that in this case as in a great many others, much scientific and practical knowledge, is wrapped up and concealed from English readers, in the *German language*. We know that profound works in that tongue have been written, on wool, and on the various races of sheep, and have accordingly taken measures to procure those works and to have them thoroughly sifted, even for any grains of information they may contain.

In the mean time, to answer, for the nonce, inquiries on some particular points, prompted more particularly by the disposition which we know exists, to push this branch of business in the south, we offer the following extracts and translations:

ON THE POINT OF INFLUENCE OF CLIMATE.—We take the following from the volume on *Sheep*, in the series of volumes put forth by that most *efficient and patriotic association*, the Society in England, for the DIFFUSION OF USEFUL KNOWLEDGE.

"The excellency of the Merinos consists in the unexampled fineness and felting property of their wool, and the luxuriance of the yolk, which enables them to support extremes of cold and wet, quite as well as any other breed; the easiness with which they adapt themselves to *every change of climate*, and thrive and retain, with common care, *all their fineness of wool under a burning tropical sun*, and in the frozen regions of the north; an appetite which renders them apparently satisfied with the coarsest food: a quietness and patience, into whatever pasture they are turned, and a gentleness and tractableness not excelled in any other breed."

Those who have had the good fortune to see Mr. JEWETT's prize ram *Fortune*, and his progeny, need go no farther to see an exemplification of the best qualities of the Merino, as they have been fully maintained "in the frozen regions of the north." The more doubtful matter is about the "burning sun," of Texas, for instance. Above is an authority which has always commanded the public confidence.

"In general," says THAER, in that part of his work which we have not yet reached in the course of re-publication, "we may lay down as a rule for our country, [Germany,] that horned cattle are most profitable on low pasture, and when maintained by stall feeding. Sheep, on the contrary, on all *dry and elevated pasture grounds, natural or artificial.*

"The Merino breed is distinguished from others by slower development, shedding its teeth later, not so soon coming to maturity, and being longer in attaining its full growth; its progress may, however, be accelerated by more nourishing food. On the other hand, sheep of this race live to a greater age, and become stronger than others. Merino ewes have been known to retain their teeth to their fifteenth year, and to produce healthy lambs at that age.

"Sheep generally bear, or go with lambs, for twenty-one weeks and a few days. Ewes generally get into heat for the first time after lambing, in six months; and the most authentic writers maintain that the healthiest lambs are the produce of the connection which takes place on the first indication of rutting. Others maintain it to be better to defer till the second time of coming into heat, that is to say, three weeks later, in order to give the ewe time to recover her strength after suckling.

"Merinos," says the same author, "are decidedly more subject to rot than ordinary German sheep. It is therefore indispensable in the maintenance of a flock of high bred sheep, to have all the damp places on their pastures drained by digging trenches, and drainage-furrows.

"Good mutton should not be spongy or very porous; but soft, of delicate fibre, and succulent.

"It has been found that wool when thoroughly washed after shearing, loses in weight about 54 per cent. provided it has not been previously washed on the back. In the latter process, the wool probably loses about 25 per cent. of its weight in the unwashed state.

"A moderate quantity of fat mixed with the fibre, is much esteemed, but the excess of that substance, which shows itself on the outside, sometimes in layers, five or six inches thick, is fit only for the poorer class of people, who use this fat to eat with the leguminous vegetables on which they live."

INFLUENCE OF NUTRITION ON WOOL.

[Translated from the Journal D'Agriculture Pratique et de Jardinage, for the Farmers' Library.]

THE feeding of sheep has a most marked influence on the quantity and quality of the wool. The circumstances to be observed on this subject are the following:

1. To obtain wool of a good quality, and in adequate quantity, sheep must be well fed.—

The art of nutrition being directed, in the *ovine* animal, toward the superficies, and being confined to the growth of wool, the augmentation of wool in length and in flexibility experiences a moment of rest at the time that nutrition is stopped, when the animal is deprived of his necessary quantity of feed. Sheep, well fed, compensate for the increase of expense by the weight of their fleece and the increased quality of the wool.

However, there is an essential difference to be observed between short-wooled and long-wooled sheep. Abundant and extremely nutritious feed soon makes the wool of the first too long—an inconvenience which is not to be feared from the second class of sheep. Flat countries, interspersed with fat and fertile pasturages, are thus naturally destined to the production of long wool.

2. When sheep receive too little nourishment, or that this, given in insufficient quantity, is not sufficiently nutritious, the wool preserves its fineness—acquires a certain length—but it is wanting a certain degree of resistance, (or elasticity;) it is also unfurnished with the requisite oiliness, and thus makes it brittle, rough to the touch, and dry as flax.

3. The regularity in the dispensation of food is of the highest importance; the wool is, in a great measure, influenced by it; and this can be observed when, in winter, sheep are well fed with hay, grains, beans, oil cake, and when that supplementary food is too soon suppressed in spring. The wool experiences a period of rest later, continuing to grow under more favorable circumstances; the woolly hair is less elastic; and, in proportion of its extent, a weak point is discovered—a true cicatrice—indicating the irregularity of growth which we have signalized.

4. Opinions differ with regard to the action of certain kinds of food on wool; all, however, agree to attribute to fertile pastures a marked effect. The fleece is more abundant—the hair is longer, and is distinguished by its smoothness, its flexibility, and its strength. Grains produce an analogous action. These aliments augment the oiliness and the good qualities of the wool.

Sturm establishes as a point that all nutrition that favors transpiration produces a finer wool; they are those that contain much nutritive matter in a small volume. Pastures interspersed with aromatic plants enter into this category—as well as grains given in the sheep-fold.

Two sheep (says Perrault de Jotemps) belonging to the same race, covered with the same quality of wool, but managed in different ways, so that to one is given feed to fatten, and to the other his ordinary diet, present already to the first shearing a variety of wool. With the first it will be longer, coarser, and will have lost its elasticity; these consequences (he adds) are much more sensible at the second and third shearing. The other sheep will have preserved all the primitive qualities of the fleece. The difference of diet being continued to the third generation, the descendants cannot be recognized as being derived from the same source.

From Mr. Morrell's excellent work, the latest American one, on Sheep, published lately by the Messrs. Harpers, we take the following:

The author remarks: "The variations in the diameter of the wool in the different parts of the fibre will also curiously correspond with the degree of heat at the time the respective portions were produced. The fibre of the wool, and record of the meteorologist, will singularly agree, if the variations in temperature are sufficiently distant from each other for any appreciable part of the fibre to grow."

In confirmation of the general fact as to the influence of climate on wool and hair, the remarks of Mr. Hunter, an English author of high authority, are quoted: "Sheep carried from a cold to a warm climate soon undergo a remarkable change in the appearance of their fleece. From being very firm and thick, it becomes thin and coarse; until at length it degenerates into hair. Even if this change should not take place to its full extent in the individual, it will infallibly do so in the course of a greater or less number of generations. The effect of heat is nearly the same on the hairs of other animals. The same species that in Russia, Siberia, and North America, produce the most beautiful and valuable furs, have nothing in the warmer climates but a coarse and thin covering of hair."

The above must be received with some limitation. Mr. Youatt makes the following remarks: "Temperature and pasture have an influence on the fineness of the fibre, and one which the farmer should never disregard; but he may, in a great measure, counteract this influence by careful management and selection in breeding. The original tendency to the production of a fleece of mixed materials existing, and the longer coarse hair covering and defending the shorter and softer wool, Nature may be gradually adapting the animal to his new locality; the hair may increase and the wool may diminish, if man is idle all the while; but a little attention to breeding and management will limit the extent of the evil, or prevent it altogether. A better illustration of this cannot be found, than in the fact that the Merino has been transplanted to every latitude on the temperate zone, and to some beyond it—to Sweden in the north, and Australia in the south, and has retained its tendency to produce wool exclusively, and wool of nearly equal fineness and value."

M. Lasteyrie, the unwearied advocate of the Merinos, uses this remarkable language: "The preservation of the Merino race in its purity at the Cape of Good Hope, and under the rigorous climate of Sweden, furnish an additional support of this, my unalterable opinion, *fine-wooled sheep may be kept wherever industrious men and intelligent breeders exist.*"

Notwithstanding the above is so consolatory, and withal so very encouraging to our brethren of the Southern States to embark in sheep husbandry, yet it is undeniable that in northern latitudes the finest wools are produced; but this has arisen much from superior skill in breeding,

and great assiduity in management in every regard. If sheep are properly selected from high-bred Merino and Saxon flocks, and taken to a latitude not south of 28°, if rightly managed, will suffer little deterioration for many years, and will produce wools of a like description of the Australian, soft, of even and long filament, fit for felting, and also admirably adapted for the finest and most beautiful of worsted fabrics. An instance is known by the writer, (Mr. Mark H. Cockrill,) of an imported flock of Saxons having been taken to Tennessee some 20 years since, and judging from the samples of wool from it now in his possession, the conclusion is inevitable, that little or no deterioration has been produced by the climate. If sheep are provided with suitable retreats for shade during the heat of the summer months, there are many districts in the Southern States unsurpassed for wool cultivation. If there is a tendency to coarseness, it will be retarded or wholly prevented by an occasional recurrence to northern stock getters.

Many imagine that the climate of the Southern States is wholly unsuitable for the production of a fine fleece, because of the inferiority of the wools of South America. The degeneracy of the Merinos taken there, has not arisen so much from the climate, as because "industrious men and intelligent breeders" were not present to manage them; furthermore, very many of the sheep transported there from Spain, were of the Chunah breed, producing very coarse wool, and these were promiscuously bred with the Merinos. The conservative power over the fleece lies in good management far more than climate.

PETERS' AGRICULTURAL ACCOUNT BOOK.

DARIEN, N. Y. Nov. 10, 1845.

To J. S. SKINNER, Esq:

Dear Sir—It gives me great pleasure to see you urge upon the farmers the importance of keeping a Farm Register. There is no excuse for the gross and culpable negligence of those who omit it. For if a register or account book is needed by any class of men, more than another, that class is the farmers.

Farming properly conducted is to a certain extent a series of experiments, the results whereof should be carefully registered, and not left to the uncertainty of human memory.—What intelligent farmer is there who would not now give his best horse for a careful register of his daily doings since he first commenced farming for himself. What a mass of facts would now be spread out for his instruction and daily guidance. And how few farmers' families there are in this broad land wherein the keeping of such a daily account of farm transactions would not form a most useful and instructive source of amusement. What would tend more to fix in the minds of the young people a habit of close observation, and patient investigation?

Having felt the want of some kind of a work which would do away with much of the complexity of the present system of commercial book-keeping, I compiled a book (a copy of which I herewith send you) which would put it in the power of every farmer with little trouble to keep a complete account of all his doings.

I feel quite sure that you can fully appreciate the importance of such a work. I do not claim for it perfection, but I do think it is the best that has yet been published.

You cannot think how much I prize the "*Library and Journal.*" The plan is right, and the public appetite requires just such a work, but I saw its appearance with fear and trembling, for I thought it would be long before it would even pay cost to its enterprising publishers. With best wishes, my dear Sir,

I remain very sincerely yours,
T. C. PETERS.

With the above we received the book referred to. We shall place it in the hands of the Printer to be so arranged that the reader may fully comprehend the system. It will be seen, as the author says in his introduction, that while "blanks are left in the heads of many columns, so that the farmer may put in any item he thinks proper, and he can also vary the printed captions to suit circumstances—the printed heading is put in to show the manner in which they should be filled." It would appear to have been framed for Northern Husbandry, but the system, he adds, "is universal in its application, so far as Agriculture is concerned, and may be made to answer as well upon the plantations at the South, as the farms of the North."

This "Complete system of Book-keeping simplified and adapted to the use of Farmers," is very appropriately dedicated to JAMES S. WADSWORTH, Jr., then President of the Agricultural Society of the State of New-York,—the author being at the time President of the Genesee County Society—not only as a slight token of his personal regard, but of approbation, of the course he had taken in the great though still too much neglected cause of agricultural improvement. Allusion is fitly made to the debt of gratitude due to Wadsworth, the elder, for services of which we hope the Farmers' Library for January will be made the medium of a more particular record.

The work sent us by the author is a half bound two quire broad foolscap. The Daily Journal of transactions occupies or comprises about one-third of the book. The Labor Account about 8 pages; Current Account of Grain and Root Crops, 4; Account of Hay and Fodder Crops, 4; Monthly Account of Live Stock, 8; Manure Account, 4; Weekly Dairy Account, or Fattening Animal Account, 8: Cash Account, Monthly, 8; Account of Sales, Weekly or Monthly, 4; Expense Account, Weekly or Monthly, 4; Farm Implement Account, 4; Land Account, 4; Profit and Loss Account, occupying about one-third, or the remaining portion of the book. We give a specimen of the manner of ruling, but we presume the Book itself can be purchased at most of the Agricultural Dépôts.

No. 1.] DAILY JOURNAL OF TRANSACTIONS.

Date.	Items.	Remarks.

No. 2.] WEEKLY LABOR ACCOUNT.

Date.	Workmen's Names.	Kind of Work.	M.	T.	W.	T.	F.	S.	S.	No. Days.	Rate pr Day.	Total.	Remarks.

No. 3.] CURRENT ACCOUNT OF GRAIN AND ROOT CROPS.

Date.	Description.	Sown or Planted.	*Bushels.* Thresh'd, Husked, or Dug.	Con-sumed.	Sold.	To whom, or by whom.	Rate per Bushl.	Total.	Remarks.

No. 4.] ACCOUNT OF HAY AND FODDER CROPS.

Date.	Kind.	*Loads in* Stack.	Mow.	*Consumed by* Horses.	Sheep.	Cattle.	Sold.	To whom.	Amount.	Remarks.

No 5.] MONTHLY ACCOUNT OF LIVE STOCK.

Date.	Description of	No.	Increased by Birth.	Purchase.	Decreased by Sale.	Accident.	Consumed.	No.	On Hand.	Remarks.

No. 6.] MANURE ACCOUNT.

Date.	Description.	Quality.	Quantity.	Crop.	No. Acres.	Total Am't.	Value.	Remarks.

No. 7.] WEEKLY DAIRY ACCOUNT, OR FATTENING ANIMAL ACCOUNT.

Date.		Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Total.	Remarks.

No. 8.] CASH ACCOUNT.—MONTHLY.

Date.	Of Whom Received.	Amount.	Date.	To Whom Paid.	Amount.

No. 9.] ACCOUNT OF SALES.—WEEKLY OR MONTHLY.

Date.	Hay.	Wheat.	Oats.	Potatoes.	Butter.							

No. 10.] EXPENSE ACCOUNT.—WEEKLY OR MONTHLY.

Date.	Blacksmith.	Wagon-maker.	Harness.	Clothing.	Hired Men.	Hired Women.	Groceries.

No. 11.] FARM IMPLEMENT ACCOUNT.

Date.	Plows.	Harness.	Rakes.	Hoes.	Wagons.	Sleighs.				

No. 12.] LAND ACCOUNT.

Acres in W. Wheat.	Corn.	Oats.	Peas.	Meadow.	Pasture.	Beans.	Potatoes.			

No. 13.] PROFIT AND LOSS ACCOUNT.

Date.	*Profit.* All Receipts and Gains.	Amount.	Date.	*Loss.* All Losses and Expenses.	Amount.

EXPOSITION OF THE CONDITION AND RESOURCES OF DELAWARE.

At the late Farmers' Convention, one of the plainest, least glittering, but most useful discourses, was by Mr. John Jones, a practical farmer, in attendance, from near Middletown, Delaware. He came down at once to practical matters, and gave a most encouraging and agreeable sketch of the progress and prosperous condition of Agriculture in his own State, and of the growth and activity of business at Wilmington. He dwelt on the advantages to be anticipated from the extension of manufactories on the Brandywine. The capital employed in manufactories in Newcastle County alone, was reported in 1840 at $1,384,700. The annual value of $314,500, about one-sixth of what was manufactured in Pennsylvania. The manufacture of powder was 2,100,000 pounds. The Messrs. Dupont manufacture weekly, 5,000 pounds of *wool*. They brought the first full bred Merino ram *Don Pedro*, into that County; but it did not need Mr. Jones's evidence to establish the association in our minds of the name of Dupont with what is most enterprising and useful and patriotic in the progress of American Industry.

Mr. Jones stated that Major P. Reybold is now the most extensive wool grower in Delaware, having for some years past, flocks of about two thousand. He gave, in short, a graphic account of the husbandry of Delaware in all its branches; giving credit to those who have signalized themselves, by skillful attention to different objects. He remarked that the farmers of Delaware generally deemed it better not to raise hogs; preferring to sell their corn at 40 or 50 cents to their eastern, and buy their bacon from their western brethren. He noted with exultation, that *no whisky* is distilled in Delaware. "No," said he, emphatically, "*not one drop.*" In reply to the reputed unhealthiness of Delaware, and the Eastern Shore of Maryland, he proved the contrary by statements of obstinate facts drawn from the Census. On the score of taxes, he knew not the exact per cent., but he paid on 740 acres of land, only $56,63. His statement of the provisions for Education, was highly honorable to the State.

Mr. Jones gave some instances of remarkable success, naming individuals and particulars—as for example: J. Sampson of Delaware, raised 103 bushels of wheat on 2¾ acres; E. Bellah of Brandywine, 39 bushels to the acre on a field of *nine* acres, *sowed among the standing corn in July!* Dr. Noble reported the case of his tenant R. Millwood, who, on a field of thirty acres, made 37½ bushels to the acre—as adjudged by measurement of two acres of average yield. This land was a few years ago purchased for $15 an acre, and would not then have yielded more than five bushels—the land was improved by application of 200 bushels of shell marl and 10 horse-cart loads to the acre, of Philadelphia compost consisting of the refuse of skin-dressers, glue boilers, &c. He attested great and very general improvement through the State, especially in their wheat crops, which he ascribed chiefly to the use of lime and better modes of culture, and to improved implements—to the use of the drill, roller, &c. He spoke in high terms of the efficacy and popularity of a drill machine invented by Moses Pennock, a plain, unpretending farmer, of inventive genius and useful in his example—the same who invented that valuable implement, the revolving horse-rake. Prompted by conviction of its value, many of these drill machines have been put in use in Delaware with the utmost satisfaction and success. Hussey's reaping machine was highly commended on experience of its efficacy—over twenty acres a day had been cut with it in a complete manner, and he thought ten or twelve would be purchased in his county next year. Mr. Jones was well impressed with the influence of Agricultural Associations, Farmers' Clubs for social meetings and discussions, and dwelt with emphasis on the benefit and greater security of a home market for Agricultural produce.

He gave an impressive account of the "*peach business*" in Delaware, of which, as well as of the sheep business, Major Reybold is considered the "Field Marshal." He and one of his sons shipped 500 baskets of peaches in one day. Previous to the first of September he had shipped upwards of 1600 baskets. Mr. Jones's exposition was without flourish and to the point—calculated to make a strong impression as to the capacities of little Delaware and the industry and energy of her sons. Many might make more dazzling addresses, and talk more about Adam and Eve and the Garden of Eden, and the Emperor of China taking the handles of the plow, and about Columella and Virgil,

but "all is not gold that glitters"—and for setting forth her skill and industry and making known her resources and her progress no State need have a better representative than was this—himself—one of her most successful working farmers. How much more encouraging, effective and useful is the downright experience of such men, than a mere parade of monstrositjes, and queer things—as "calico corn," and fantail pigeons.

The miserable census, put down the whole wheat crop of Delaware in 1839 at 315,165 bushels, and four years after that the Commissioner of Patents places it at only 333,103, while Mr, Jones instances a single farm of 375 acres that produced 2,884, nearly the one-hundredth part of all that is credited to the State.—He has no doubt that the crop of Newcastle county alone was upwards of 400,000 bushels. What miserable deceptions are the returns and estimates we have had of the industry and products of the country.

No State in the Union is going ahead faster in agricultural improvent than Delaware. She has the advantage of being in the centre of light and knowledge. Tho' his place has been well supplied, we were sorry to see that Doctor Thompson had retired from the Presidency of the Society, which has contributed so much to the honorable position which Delaware holds among her sisters.

If it were not altogether impossible to publish the agricultural addresses delivered at the various exhibitions, we should have been tempted to give place to Doctor Muse's and the venerable Jonathan Roberts's, as also to Mr. Sellman's, at Marlboro. With such advocates the cause of Agriculture can never go backwards—that is. if agriculturists will discard demagogues and commit the business of legislation to those who being thoroughly identified with, can the better understand their interests.

Let them put on their considering cap and solve a few questions. How much of the money raised by and for the government, is directly or indirectly paid by the landed interest, and how much of it is expended for its account?

HEMP AND FLAX.

New mode of preparation for the Manufacturer—Important Invention.

THE value of Hemp and Flax, and the great range of country adapted to their culture, have not escaped our attention. We are fully sensible of our obligation to procure and promulgate the best information to be had, on the culture and preparation of these articles, and hope to be able to fulfil any reasonable anticipation on that point. But, with all the space at our command, we have not yet been able to take up this branch of industry in a manner at all comporting with its importance. The most recent item of note in regard to it, that has fallen under our notice, consists in the improvements effected in the preparation and manufacture of them by Mr. BILLINGS. Of what is peculiar in both, fuller accounts will be given in the January number of the Farmers' Library. In the mean time we took an opportunity of getting an experienced manufacturer to look at the operation of his machine, a small one on rather a model scale, and from him we have since been favored with the following:

PATERSON, N. J. Nov. 19, 1845.

To the Ed. of Farm. Lib:

THE object of Mr. Billings is, to take the Flax from the farmer before rotting, and to rot, dry, break and scutch it, for the manufacturer.

The break seems to me to do its work very rapidly, and better than I have seen it done heretofore; the ends of the Flax appear to be rather more entangled, but the scutcher relieves it from this difficulty, and there is this advantage in this latter machine over many others: that it leaves the Flax in better condition for the hackle, and can be prepared on any scale graduated to suit the purpose to which it is applied.

I had no means of ascertaining what the waste would be in the processes of these machines, but Mr. Billings says he can so prepare the Flax as to yield over the rougher and fine eight huckles, 85 per cent. of long Flax. This exceeds, by 20 per cent. the produce of any other known machines. The best Flax produced in this way will not yield over 65 lbs. of Flax to the 100 lbs. of scutched Flax, and if this be so, it will be of just that value over any other machine to the growers of Flax.

A similar plan, as I suppose, for retting the Flax, was tried at Hunterdon, New-Jersey, about ten years ago, and was found unsuccessful. In Europe, attempts to use steam for like purposes have failed, and the Flax was never so strong nor so durable, as when rotted in the pots, as they are called, by the operations of Nature.

My own impression is, that one cause of failure has been the season in which it has been done. If it were delayed till September or October, I think it would do better and be more likely to succeed.

Very respectfully, I. T.

Mr. BILLINGS has seen the above, and says our correspondent has been led to erroneous conclusions by a misconception of his processes. He says the rotting process is conducted on scientific principles, and has been found to be perfectly successful. Some eight or ten pages of our next number will be given up to this interesting subject.

THE PREMIUM FARMS IN PRINCE GEORGE'S COUNTY, MARYLAND.

THE FIRST HONORS OF AGRICULTURE—Are those which are awarded for *best managed farms*, and hopeless, almost, is the case of him, among young farmers, who is not animated by the ambition to win them. It should be coveted in rural, as the marshal's baton is in military life, with this exception—that while the latter, like the key of Blue-Beard's closet. is marked with indelible stains of blood, the chaplet that wreathes the brow of the victorious farmer, is the growth of useful industry, the blessed emblem of peaceful abundance—yet it has been the miserable, the barbarous policy of governments, even of *republican governments*, to reserve all their honors and rewards, their high pay and their life salaries, to provide hospitals and medicines, only for those whose province it is, when nations can be drawn into war, to accompiish in the shortest time the *greatest possible destruction of human life. Will nations ever learn to think for themselves and cease to be ridden by demagogues for their own sinister purposes?*

For ourselves, in our limited sphere, we shall do what we can to give public sentiment a right direction on these points—to teach the American Republican Farmer to compel legislators to bestow public honors on the *plow*, rather than the sword—on civil virtues in preference to military achievement. We have now room only to register the award of the Prince George's County Agricultural Committees last month.

For the best managed Farm, to "*Mount Calvert* Plantation," containing 900 acres owned by Capt. JOHN BROOKS.

The second premium to "*Eglinton* Plantation," containing 300 acres, own by W. W. W. BOWIE, Esq.

The third to "*Willow Brook* Plantation," combining about 900 acres owned by THOMAS DUCKETT, Esq. A conspicuous place shall hereafter be assigned *to all such awards*, as they may come to our knowledge.

For his truly excellent address, a vote of thanks was unanimously voted to Hon. JOHN SELLMAN, at the instance of R. W. BOWIE, a large Planter, who loves the honor of his State as he does his own, and for *its sake* would *self-impose and pay, any amount of taxation.* Alas! for the reproach, that the mention of the fact implies against our native State! Ay, we were going to say—our native—but the pen refuses the office. These things have close connection with the character of an Agricultural people, and are, therefore, fit subjects for allusion in a journal profoundly devoted to the honor and prosperity of that class of the community.

EXPENSE OF HORSE POWER.—We have long been persuaded that agriculturists, wilfully or unreflectingly, shut their eyes against the serious expensiveness of horse power, as compared with other animal or machine power. It would be well worth their while to compare the cost of keeping a horse with that of keeping the ox, the mule, and the man. In examining the following statement, let the reader bear in mind that by "*corn*" the writer means oats, probably, and he will be near enough for the purposes of comparison, by estimating a penny (d.) at two cents, and a shilling (s.) at a quarter of a dollar.

One-horse Carts versus Wagon.—I have no light plowing land, nor have I more than 20 or 30 acres of very heavy land. I will, therefore, relate my actual experience. In the employment of wagons and the old broad-wheeled dung-carts, I required one wagon, one cart, and three horses to every 50 acres of arable land. I also kept a light cart for general purposes. Now that I am employing carts, I find that I get through my work much more easily with two horses and two carts to 50 acres. The following is a fair calculation of the first outlay under the two systems:

	£	s.	d.		£	s.	d.
1 wagon.....	25	0	0	2 4-inch wheel 1 horse carts	24	0	0
1 dung-cart...	15	0	0	Two horses...	40	0	0
3 horses.....	60	0	0		64	0	0
Extra harness	2	0	0	Balance in favor of carts	41	0	0
Proportionate cost of the light cart to 50 acres....	3	0	0				
Total.....	105	0	0	Total.....	105	0	0

This shows a saving of upwards of 16s. an acre, which many young farmers would find extremely useful to expend in stock or implements. There is also some annual saving in the expense of the repairs under the cart system, as well as that of the keep of one horse to every 50 acres. I believe there are those who think this of little importance; that they can keep horses at a very small expense, say from 3s. to 5s. per week; and that if fewer are kept, they must be fed more highly, and therefore the cost is much the same, forgetting that the more horses kept, the greater number of hands required to attend them, whose time also is wasted if the animals are not in a state to do a good day's work; nor is the manure nearly so valuable as when the horses are kept in a better state. To estimate the saving of keeping one horse less to 50 acres, I will make my calculations from my own method of keep. I have not for years allowed my horses any hay. In winter I give them 10 lbs. of corn, 10 lbs. of carrots or Swedes, and as much straw-chaff as they will eat per diem. The corn I value at 6s. per week, the roots at 9d., and the straw, with the expense of cutting into chaff, 1s. 3d., making in the whole, 8s. per week; which, with 1s. for shoeing, &c., amounts to 9s. In the summer I give them green clover or vetches, without corn, which I value at 5s. per week, making 6s., with 1s. added for shoeing, &c.; the average, therefore, for the whole year, will be 7s. 6d. each horse. It therefore follows that if we can save one horse in the cultivation of 50 acres, it will amount to nearly 8s. per acre.

[E. Bowly, Royal Eng. Ag. Soc. Jour.

AGRICULTURAL SURVEYS.—The Legislature of Maryland would do well to provide for an Agricultural Survey of the State. It might be divided into the Eastern Shore, to be reported upon, we will venture to suggest, by such a man as Col. N. GOLDSBORO. The Western Shore, upper *wheat* Counties, by Mr. STABLER of Montgomery, the hay region around Baltimore, by Dr. G. B. SMITH, and the *tobacco* region by W. W. BOWIE, Esq. Such reports, on the Agricultural practices and resources of the several Counties, would be of more real value than all the party wrestling for the next two months at Annapolis, just to see which party can get the "back-lock" on the other. For all the time that is thus spent in party wrangling and maneuvering, the people—the Farmers—must pay, while, for a full development of the Agricultural condition and wants of the State these partisan leaders, calling themselves legislators, would refuse to appropriate a dollar, and that for fear of *losing their popularity with their agricultural constituents!*—So we go! humbugged and demagogue-ridden to the end of the chapter! The wisest man who would seek the popular support, with views exclusively to the general welfare, would be laughed at as a greenhorn! Hence has party spirit been called "the madness of the many, for the benefit of the few."

PRICES CURRENT.

[Corrected, November 22, for the Monthly Journal of Agriculture.]

ASHES—Pots, 1st sort	℔ 100 lb.	3 81½	@ 3 87½
Pearls, 1st sort, '45	—	—	@ 4 31½
BEESWAX—American Yellow	—	30	@— 30½
CANDLES—Mould, Tallow	℔ lb.	— 9	@— 11
Sperm, Eastern and City	—	27	@— 38
COTTON—From	℔ lb.	— 6	@— 9½
COTTON BAGGING—American	—	12	@— 13
CORDAGE—American	℔ lb.	— 11	@— 12
DOMESTIC GOODS—Shirtings,	℔ y.	— 5	@— 11
Sheetings	—	6½	@— 15
FEATHERS—American, live	—	28	@— 32
FLAX—American	—	7½	@— 8
FLOUR & MEAL—Genesee,	℔ bbl.	7 —	@— —
Troy		7 —	@— —
Michigan		7 —	@— —
Ohio, flat hoop		7 —	@— —
Ohio, Heywood & Venice		7 12½	@ 7 25
Ohio, via New-Orleans		6 37½	@ 6 50
Pennsylvania		— —	@— —
Brandywine		6 50	@— —
Georgetown		6 50	@— —
Baltimore City Mills		6 50	@— —
Richmond City Mills		7 25	@ 7 50
Richmond Country		6 50	@— —
Alexandria, Petersburg, &c		6 50	@— —
Rye Flour		4 37½	@ 4 50
Corn Meal, Jersey and Brand		3 75	@ 4 —
Corn Meal, Brandywine	hhd.	— —	@— —
GRAIN—Wheat, Western	℔ bush.	1 35	@ 1 40
Wheat, Southern	new	1 30	@ 1 40
Rye, Northern		— 80	@— 85
Corn, Jersey and North	(meas.)	— 82½	@— 85
Corn, Southern	(measure)	— —	@— —
Corn, Southern	(weight)	— 80	@— 82½
Oats, Northern		— 50	@— —
Oats, Southern		— 45	@— 46
HAY—North River	bales	— 75	@— 80
HEMP—American, dew-rotted	ton	80 —	@95 —
" " water-rotted		125 —	@175 —
HOPS—1st sort, 1845		— —	@— 35
IRON—American Pig, No. 1		37 50	@40 —
" Common		27 50	@32 50
LIME—Thomaston	℔ bbl,	1 —	@— —
LUMBER—Boards, N.R.,	℔ M. ft. clr.	35 —	@40 —
Boards, Eastern Pine		10 —	@11 —
Boards, Albany Pine	℔ pce.	— 8	@— 18
Plank, Georgia Pine	℔ M. ft.	33 —	@40 —
Staves, White Oak, pipe		48 —	@— —
Staves, White Oak, hhd		38 —	@— —
Staves, White Oak, bbl		30 —	@31 —
Staves, Red Oak, hhd		30 —	@— —
Hoops		25 —	@30 —
Scantling, Pine, Eastern		14 —	@16 25
Scantling, Oak		30 —	@35 —
Timber, Oak	℔ cubic foot	— 25	@— 37
Timber, White Pine		— 18	@— 25
Timber, Georgia Yellow Pine		— 30	@— 35
Shingles, 18 in	℔ bunch	1 75	@ 2 —
Shingles, Cedar, 3 feet, 1st quality		— —	@24 —
Shingles, Cedar, 3 feet, 2d quality		20 —	@22 —
Shingles, Cedar, 2 feet, 1st quality		— —	@17 50
Shingles, Cedar, 2 feet, 2d quality		15 —	@16 —
Shingles, Cypress, 2 feet		11 —	@13 —
Shingles, Company		— —	@29 —
MUSTARD—American		— 16	@— 31
NAILS—Wrought, 6d to 20d	℔ lb.	— 10	@— 12½
Cut, 4d to 40d		— 4	@— 4½
PLASTER PARIS—	℔ ton	2 62½	@— —
PROVISIONS—Beef, Mess,	℔ bbl	8 —	@ 8 25
Beef, Prime,		5 —	@ 5 25
Pork, Mess, Ohio, new		14 12½	@— —
Pork, Prime, Ohio, old and new		10 25	@10 62½
Lard, Ohio	℔ lb.	— 8	@— 8½
Hams, Pickled		— —	@— —
Shoulders, Pickled		— 5½	@— 5¾
Sides, Pickled		— —	@— —
Beef, Smoked	℔ lb.	— 7½	@— 8
Butter, Orange County		— 18	@— 20
Butter, Western Dairy		— 15	@— 17
Butter, ordinary		— 12	@— 14
Cheese, in casks and boxes		— 7½	@— 8½
SEEDS—Clover	℔ lb.	— 10	@— 10½
Timothy	℔ tierce	15 —	@16 —
Flax, Rough		10 —	@10 12½
SOAP—N. York, Brown	℔ lb.	— 4	@— 6
TALLOW—American, Rendered		— 7½	@— 7¾
TOBACCO—Virginia	@ lb.	— 3	@— 6
North Carolina		— 3	@— 5
Kentucky and Missouri		— 3	@— 7
WOOL—Am. Saxony, Fleece,	℔ lb.	— 38	@— 40
American Full Blood Merino		— 36	@— 38
American ½ and ¾ Merino		— 30	@— 33
American Native and ¼ Merino		— 26	@— 28
Superfine, Pulled		— 29	@— 31